

SINCE
1848

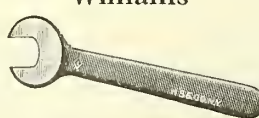
HAMMACHER SCHLEMMER & Co. NEW YORK

Drop-Forged Wrenches

Williams



Semi-finished forgings are milled, case-hardened (no color) all over and have heads ground bright. Unless otherwise specified Finished Wrenches will be supplied.



Finished forgings are milled, polished all over; case-hardened (mottled) and lacquered—heads bright.



Unfinished forgings are milled only.

Stock Milling. All wrenches are milled somewhat larger than stated in tables, to allow for proper clearance and variation.

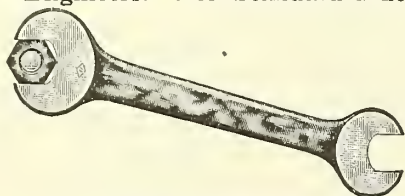
Special Milling to order, without extra charge in lots of 50 or more of a size. A sample nut or screw, as gauge, should accompany orders.

Special Wrenches made to order. Prices will be quoted upon receipt of models or drawings and specifications stating kind of finish (see above description) and quantity required.

Whitworth standard, metric measure or special openings milled to order.

When ordering please use numbers and state whether Unfinished, Semi-finished or Finished Wrenches are desired.

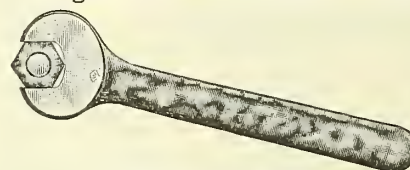
Engineers. For Standard Nuts



15-Degree Angle. Double Head

Number	For U. S. Standard Nuts Size Bolts Inches	Openings Milled Inches	Extreme Length Inches	Thickness Heads Inches	Unfin- ished Each	Semi- finished Each	Fin- ished Each
21	$\frac{1}{8}$ & $\frac{3}{16}$	$\frac{5}{16}$ & $\frac{13}{32}$	$3\frac{1}{2}$	$\frac{3}{16}$ & $\frac{3}{16}$	\$.12	\$.24	
22	$\frac{1}{8}$ & $\frac{1}{4}$	$\frac{5}{16}$ & $\frac{1}{2}$	4	$\frac{3}{16}$ & $\frac{1}{4}$	.13	.26
23	$\frac{3}{16}$ & $\frac{1}{4}$	$\frac{13}{32}$ & $\frac{1}{2}$	4	$\frac{1}{4}$ & $\frac{1}{4}$	.14	.28
24	$\frac{3}{16}$ & $\frac{5}{16}$	$\frac{13}{32}$ & $\frac{1}{2}$	$4\frac{7}{8}$	$\frac{1}{4}$ & $\frac{9}{32}$	.16	.32
25	$\frac{1}{4}$ & $\frac{5}{16}$	$\frac{1}{2}$ & $\frac{13}{32}$	$4\frac{7}{8}$	$\frac{9}{32}$ & $\frac{5}{16}$	.18	.36
26	$\frac{1}{4}$ & $\frac{3}{8}$	$\frac{1}{2}$ & $\frac{11}{16}$	$5\frac{1}{8}$	$\frac{9}{32}$ & $\frac{5}{16}$	.20	.40
27	$\frac{5}{16}$ & $\frac{3}{8}$	$\frac{19}{32}$ & $\frac{11}{16}$	$5\frac{1}{8}$	$\frac{5}{16}$ & $\frac{1}{2}$	.22	.44
28	$\frac{3}{8}$ & $\frac{1}{2}$	$\frac{19}{32}$ & $\frac{25}{32}$	$6\frac{7}{8}$	$\frac{5}{16}$ & $\frac{11}{32}$	.24	.48
29	$\frac{3}{8}$ & $\frac{1}{2}$	$\frac{11}{16}$ & $\frac{25}{32}$	$6\frac{7}{8}$	$\frac{11}{32}$ & $\frac{11}{16}$	.26	.52
30	$\frac{3}{8}$ & $\frac{1}{2}$	$\frac{11}{16}$ & $\frac{25}{32}$	$7\frac{1}{4}$	$\frac{11}{32}$ & $\frac{11}{16}$	.28	.56
31	$\frac{1}{2}$ & $\frac{1}{2}$	$\frac{25}{32}$ & $\frac{7}{8}$	$7\frac{3}{4}$	$\frac{13}{32}$ & $\frac{1}{2}$	.30	.60
32	$\frac{1}{2}$ & $\frac{1}{2}$	$\frac{25}{32}$ & $\frac{7}{8}$	$8\frac{3}{4}$	$\frac{13}{32}$ & $\frac{1}{2}$	.32	.64
33	$\frac{1}{2}$ & $\frac{1}{2}$	$\frac{25}{32}$ & $\frac{7}{8}$	$8\frac{3}{4}$	$\frac{13}{32}$ & $\frac{1}{2}$	.36	.72
34	$\frac{1}{2}$ & $\frac{3}{8}$	$\frac{7}{8}$ & $1\frac{1}{16}$	$9\frac{3}{4}$	$\frac{1}{2}$ & $\frac{1}{2}$	.40	.80
35	$\frac{9}{16}$ & $\frac{5}{8}$	$\frac{31}{32}$ & $1\frac{1}{16}$	$9\frac{3}{4}$	$\frac{1}{2}$ & $\frac{1}{2}$	.44	.88
36	$\frac{9}{16}$ & $\frac{3}{4}$	$\frac{31}{32}$ & $1\frac{1}{16}$	$11\frac{1}{2}$	$\frac{1}{2}$ & $\frac{9}{16}$	.51	1.02
37	$\frac{5}{8}$ & $\frac{3}{4}$	$\frac{31}{32}$ & $1\frac{1}{16}$	$11\frac{1}{2}$	$\frac{9}{16}$ & $\frac{9}{16}$	.58	.87
38	$\frac{5}{8}$ & $\frac{7}{8}$	$1\frac{1}{16}$ & $1\frac{1}{16}$	$13\frac{1}{2}$	$\frac{5}{16}$ & $\frac{21}{32}$	.65	.98
39	$\frac{3}{4}$ & $\frac{7}{8}$	$1\frac{1}{16}$ & $1\frac{1}{16}$	$13\frac{1}{2}$	$\frac{21}{32}$ & $\frac{21}{32}$	.76	1.14
40	$\frac{3}{4}$ & 1	$1\frac{1}{16}$ & $1\frac{5}{8}$	$15\frac{1}{2}$	$\frac{21}{32}$ & $\frac{3}{4}$	.88	1.32
41	$\frac{7}{8}$ & 1	$1\frac{1}{16}$ & $1\frac{5}{8}$	$15\frac{1}{2}$	$\frac{3}{4}$ & $\frac{3}{4}$	1.00	1.50	
42	$\frac{7}{8}$ & $1\frac{1}{8}$	$1\frac{1}{16}$ & $1\frac{13}{16}$	17	$\frac{3}{4}$ & $\frac{27}{32}$	1.18	1.77	
43	1 & $1\frac{1}{8}$	$1\frac{1}{16}$ & $1\frac{13}{16}$	17	$\frac{27}{32}$ & $\frac{27}{32}$	1.36	2.04	
44	1 & $1\frac{1}{4}$	$1\frac{1}{16}$ & 2	19	$\frac{27}{32}$ & $\frac{29}{32}$	1.55	2.33	
45	$1\frac{1}{8}$ & $1\frac{1}{4}$	$\frac{11}{16}$ & 2	19	$\frac{27}{32}$ & $\frac{29}{32}$	1.80	2.70	
46	$1\frac{1}{8}$ & $1\frac{3}{8}$	$\frac{11}{16}$ & $2\frac{3}{16}$	21	$\frac{27}{32}$ & 1	2.05	3.08	
47	$1\frac{1}{4}$ & $1\frac{3}{8}$	2 & $2\frac{3}{16}$	21	$\frac{27}{32}$ & 1	2.30	3.45	
48	$1\frac{1}{4}$ & $1\frac{1}{2}$	2 & $2\frac{3}{8}$	23	$\frac{27}{32}$ & $1\frac{1}{16}$	2.65	3.98	
49	$1\frac{3}{8}$ & $1\frac{1}{2}$	$2\frac{3}{16}$ & $2\frac{3}{8}$	23	1 & $1\frac{1}{16}$	3.00	4.50	
50	$1\frac{3}{8}$ & $1\frac{5}{8}$	$2\frac{3}{16}$ & $2\frac{9}{16}$	25	1 & $1\frac{1}{8}$	3.35	5.03	
51	$1\frac{1}{2}$ & $1\frac{5}{8}$	$2\frac{3}{8}$ & $2\frac{9}{16}$	25	$1\frac{1}{16}$ & $1\frac{1}{8}$	3.80	5.70	
52	$1\frac{1}{2}$ & $1\frac{3}{4}$	$2\frac{3}{8}$ & $2\frac{3}{4}$	27	$1\frac{1}{16}$ & $1\frac{7}{32}$	4.25	6.38	
53	$1\frac{5}{8}$ & $1\frac{3}{4}$	$2\frac{9}{16}$ & $2\frac{3}{4}$	27	$1\frac{1}{8}$ & $1\frac{7}{32}$	4.70	7.05	
53A	$1\frac{5}{8}$ & $1\frac{7}{8}$	$2\frac{9}{16}$ & $2\frac{15}{16}$	29	$1\frac{1}{8}$ & $1\frac{3}{16}$	5.30	7.95	
54	$1\frac{5}{8}$ & 2	$2\frac{9}{16}$ & $3\frac{1}{8}$	31	$1\frac{1}{8}$ & $1\frac{3}{8}$	5.90	8.85	
55	$1\frac{3}{4}$ & 2	$2\frac{3}{4}$ & $3\frac{1}{8}$	32	$1\frac{1}{2}$ & $1\frac{3}{8}$	6.50	9.75	
55A	$1\frac{7}{8}$ & 2	$2\frac{11}{16}$ & $3\frac{1}{8}$	33	$1\frac{1}{2}$ & $1\frac{3}{8}$	7.35	11.03	
56	$1\frac{3}{4}$ & $2\frac{1}{4}$	$2\frac{3}{4}$ & $3\frac{1}{2}$	34	$1\frac{1}{2}$ & $1\frac{11}{16}$	8.20	12.30	
56A	$1\frac{7}{8}$ & $2\frac{1}{4}$	$2\frac{11}{16}$ & $3\frac{1}{2}$	35	$1\frac{3}{4}$ & $1\frac{7}{8}$	9.05	13.58	
57	2 & $2\frac{1}{4}$	$3\frac{1}{8}$ & $3\frac{1}{2}$	36	$1\frac{3}{8}$ & $1\frac{1}{2}$	10.25	15.38	
57A	2 & $2\frac{1}{2}$	$3\frac{1}{8}$ & $3\frac{7}{8}$	37	$1\frac{3}{8}$ & $1\frac{5}{8}$	11.50	17.25	
58	$2\frac{1}{4}$ & $2\frac{1}{2}$	$3\frac{1}{2}$ & $3\frac{7}{8}$	38	$1\frac{1}{2}$ & $1\frac{5}{8}$	12.75	19.13	
59	$2\frac{1}{4}$ & $2\frac{3}{4}$	$3\frac{1}{2}$ & $4\frac{1}{4}$	39	$1\frac{1}{2}$ & $1\frac{5}{8}$	14.50	21.75	
60	$2\frac{1}{2}$ & $2\frac{3}{4}$	$3\frac{7}{8}$ & $4\frac{1}{4}$	40	$1\frac{5}{8}$ & $1\frac{5}{8}$	16.25	24.38	
61	$2\frac{1}{2}$ & 3	$3\frac{7}{8}$ & $4\frac{5}{8}$	42	$1\frac{5}{8}$ & $1\frac{7}{8}$	18.00	27.00	
62	$2\frac{3}{4}$ & 3	$4\frac{1}{4}$ & $4\frac{5}{8}$	44	$1\frac{5}{8}$ & $1\frac{7}{8}$	20.50	30.75	
63	$2\frac{3}{4}$ & $3\frac{1}{2}$	$4\frac{1}{4}$ & $5\frac{3}{8}$	46	$1\frac{5}{8}$ & $2\frac{1}{2}$	23.00	34.50	
64	3 & $3\frac{1}{2}$	$4\frac{5}{8}$ & $5\frac{3}{8}$	48	$1\frac{7}{8}$ & $2\frac{1}{2}$	25.50	38.25	

Engineers. For Standard Nuts



15-Degree Angle. Single Head

The following Semi-finished and Finished Wrenches have hole in end of handle.

Number	17	18	19	19A	20	20A	21A	21B	21C	22A	22B
Hole, inches	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{7}{8}$	$\frac{7}{8}$	1	1	$1\frac{1}{8}$	$1\frac{1}{8}$	$1\frac{1}{8}$	$1\frac{1}{4}$	$1\frac{1}{4}$

Wrenches of this style but with handle tapered will be furnished on orders for the larger sizes, beginning with No. 11. Tapered handle wrenches of smaller sizes and flared handle wrenches of larger sizes can also be furnished if ordered in quantities.

Number	For U. S. Standard Nuts Size Bolts Inches	Openings Milled Inches	Extreme Length Inches	Thickness Heads Inches	Unfinished Each	Semi-finished Each	Finished Each
00	$\frac{1}{8}$	$\frac{5}{16}$	3	$\frac{5}{32}$	\$.08	\$.12	\$.16
0	$\frac{3}{16}$	$\frac{13}{32}$	$3\frac{1}{2}$	$\frac{3}{16}$	.09	.13	.18
1	$\frac{1}{4}$	$\frac{1}{2}$	4	$\frac{1}{4}$	.10	.15	.20
2	$\frac{5}{16}$	$\frac{19}{32}$	$4\frac{3}{4}$	$\frac{9}{32}$	.12	.18	.24
3	$\frac{3}{8}$	$\frac{11}{16}$	$5\frac{5}{8}$	$\frac{5}{16}$	.14	.21	.28
4	$\frac{1}{2}$	$\frac{1}{2}$	$6\frac{1}{2}$	$\frac{3}{16}$	.17	.25	.34
5	$\frac{1}{2}$	$\frac{7}{8}$	$7\frac{1}{2}$	$\frac{13}{32}$	.20	.30	.40
6	$\frac{9}{16}$	$\frac{31}{32}$	$8\frac{3}{8}$	$\frac{7}{16}$	.26	.39	.52
7	$\frac{5}{8}$	$1\frac{1}{16}$	$9\frac{1}{4}$	$\frac{1}{2}$	.32	.48	.64
8	$\frac{3}{4}$	$1\frac{1}{4}$	$11\frac{1}{8}$	$\frac{9}{16}$	.42	.63	.84
9	$\frac{7}{8}$	$1\frac{7}{8}$	13	$\frac{21}{32}$	.58	.87	1.16
10	1	$1\frac{5}{8}$	$14\frac{3}{4}$	$\frac{3}{4}$	.75	1.13	1.50
11	$1\frac{1}{8}$	$1\frac{13}{16}$	$16\frac{1}{2}$	$\frac{27}{32}$	1.00	1.50	2.00
12	$1\frac{1}{4}$	2	$18\frac{1}{2}$	$\frac{33}{32}$	1.25	1.88	2.50
13	$1\frac{1}{2}$	$2\frac{3}{8}$	20	1	1.62	2.43	3.24
14	$1\frac{1}{2}$	$2\frac{3}{8}$	22	$1\frac{1}{16}$	2.00	3.00	4.00
15	$1\frac{5}{8}$	$2\frac{9}{16}$	24	$1\frac{1}{8}$	2.50	3.75	5.00
16	$1\frac{3}{4}$	$2\frac{5}{8}$	$25\frac{1}{2}$	$1\frac{3}{8}$	3.00	4.50	6.00
16A	$1\frac{7}{8}$	$2\frac{11}{16}$	27	$1\frac{7}{8}$	3.70	5.55	7.40
17	2	$3\frac{1}{8}$	$29\frac{1}{2}$	$1\frac{3}{4}$	4.40	6.60	8.80
18	$2\frac{1}{4}$	$3\frac{1}{2}$	33	$1\frac{11}{16}$	6.00	9.00	12.00
19	$2\frac{1}{2}$	$3\frac{7}{8}$	37	$1\frac{5}{8}$	7.60	11.40	15.20
19A	$2\frac{3}{4}$	$4\frac{1}{4}$	39	$1\frac{5}{8}$	10.00	15.00	20.00
20	3	$4\frac{5}{8}$	41	$1\frac{7}{8}$	13.00	19.50	26.00
20A	$3\frac{1}{4}$	5	43	$1\frac{7}{8}$	16.00	24.00	32.00
21A	$3\frac{1}{2}$	$5\frac{3}{8}$	45	$2\frac{1}{2}$	22.00	33.00	44.00
21B	$3\frac{3}{4}$	$5\frac{3}{4}$	47	$2\frac{1}{2}$	25.00	36.00	47.00
21C	4	$6\frac{1}{8}$	49	$2\frac{1}{2}$	28.00	39.00	50.00
22A	$4\frac{1}{2}$	$6\frac{3}{8}$	51	3	40.00	60.00	80.00
22B	5	$7\frac{3}{8}$	53	3	45.00	65.00	85.00

Perfect Handle



No. 640. 15-Degree Angle

Drop-forged from one piece of steel, carefully case-hardened and finished. The opening is milled and the wooden handle locked in and waterproofed.

For United States Standard Nut Size Bolt Inch	Openings Milled Inches	Length Over all Inches	Thickness of Head Inch	Per Dozen
$\frac{1}{2}$	$\frac{7}{8}$	$7\frac{1}{2}$	$\frac{13}{32}$	\$5.00
$\frac{9}{16}$	$\frac{31}{32}$	$8\frac{3}{8}$	$\frac{27}{64}$	5.50
$\frac{5}{8}$	$1\frac{1}{16}$	$9\frac{1}{4}$	$\frac{1}{2}$	6.50
$\frac{3}{4}$	$1\frac{1}{4}$	$11\frac{1}{8}$	$\frac{9}{16}$	8.50
$\frac{7}{8}$	$1\frac{1}{8}$	13	$\frac{21}{32}$	11.00
1	$1\frac{5}{8}$	$14\frac{7}{8}$	$\frac{3}{4}$	14.00

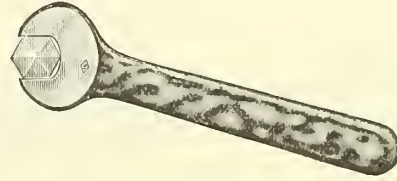
Drop-Forged Wrenches

Williams

15-Degree Angle. For Hexagon Head Cap Screws



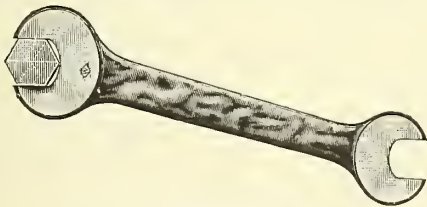
Light. Single Head



Heavy. Single Head

Number	For Hexagon Head Cap Screws Diameter Inches	Opening Milled Inches	Extreme Length Inches	Thickness Heads Inch	Unfinished Each	Semi-finished Each	Finished Each
700	1/8	5/16	3	5/32	\$.08	\$.12	\$.16
701	3/16	3/8	3 1/2	3/16	.09	.13	.18
701A	1/4	7/16	4	1/4	.10	.15	.20
702	5/16	1/2	4	1/4	.10	.15	.20
703	3/8	9/16	4 3/4	5/32	.12	.18	.24
704	7/16	5/8	5 5/8	1/2	.14	.21	.28
705	1/2	3/4	6 1/2	11/32	.17	.25	.34
705A	9/16	13/16	7 1/2	13/32	.20	.30	.40
706	5/8	7/8	7 1/2	13/32	.20	.30	.40
707	3/4	1	8 3/8	7/16	.26	.39	.52
708	7/8	1 1/8	9 1/4	1/2	.32	.48	.64
708A	1	1 1/4	11 1/4	9/16	.42	.63	.84
709	1 1/8	1 3/8	11 1/8	5/8	.42	.63	.84
710	1 1/4	1 1/2	13	3/4	.58	.87	1.16
711	1 3/8	1 5/8	14 3/4	1	.75	1.13	1.50

Number	For Hexagon Head Cap Screws Diameter Inches	Opening Milled Inches	Extreme Length Inches	Thickness Heads Inches	Unfinished Each	Semi-finished Each	Finished Each
1003	3/8	9/16	5	5/16	\$.14	\$.21	\$.28
1004	7/16	5/8	5 3/4	3/8	.16	.24	.32
1005	1/2	3/4	6 1/2	1/2	.19	.28	.38
1006	9/16	13/16	7 1/4	1/2	.23	.35	.46
1007	5/8	7/8	8	9/16	.28	.42	.56
1008	3/4	1	9 1/2	5/8	.35	.53	.70
1009	7/8	1 1/8	11	3/4	.46	.69	.92
1010	1	1 1/4	12 1/2	7/8	.60	.90	1.20
1011	1 1/8	1 3/8	14	1 1/8	.76	1.14	1.52
1012	1 1/4	1 1/2	15 1/2	1 1/8	.96	1.44	1.92
1013	1 3/8	1 5/8	17	1 1/4	1.20	1.80	2.40



Light. Double Head



Light. Double Head

Number	For Hexagon Head Cap Screws Diameter Inches	Opening Milled Inches	Extreme Length Inches	Thickness Heads Inch	Unfinished Each	Semi-finished Each	Finished Each
721	1/8 & 3/16	5/16 & 3/8	3 1/2	5/32 & 3/16	\$.12	\$.18	\$.24
722	3/8 & 1/4	7/16 & 1/2	4	3/16 & 1/4	.13	.20	.26
723	1/2 & 5/16	9/16 & 3/4	4	1/2 & 5/16	.14	.21	.28
723A	3/16 & 1/4	3/8 & 1/2	4	3/16 & 1/4	.14	.21	.28
725	1/4 & 5/16	7/16 & 1/2	4 7/8	1/4 & 3/8	.18	.27	.36
725A	1/4 & 3/8	7/16 & 9/16	4 7/8	1/4 & 3/8	.18	.27	.36
725B	5/16 & 3/8	1/2 & 9/16	4 7/8	1/4 & 9/16	.18	.27	.36
726	5/16 & 7/16	1/2 & 5/8	5 7/8	1/4 & 5/16	.20	.30	.40
727	3/8 & 1/2	9/16 & 3/4	5 7/8	3/8 & 1/2	.22	.33	.44
728	3/8 & 1/2	9/16 & 3/4	6 7/8	3/8 & 1/2	.24	.36	.48
729	7/16 & 1/2	5/8 & 3/4	6 7/8	5/16 & 3/4	.26	.39	.52
730	7/16 & 9/16	5/8 & 13/16	7 3/4	5/16 & 13/32	.28	.42	.56
731	1/2 & 9/16	3/4 & 13/16	7 3/4	1/2 & 13/16	.30	.45	.60
731A	1/2 & 5/8	3/4 & 7/8	7 3/4	1/2 & 7/8	.30	.45	.60
731B	9/16 & 5/8	13/16 & 7/8	7 3/4	11/16 & 7/8	.30	.45	.60
732	5/8 & 3/4	13/16 & 1	8 3/4	13/16 & 1	.32	.48	.64
733	5/8 & 3/4	13/16 & 1	8 3/4	13/16 & 1	.36	.54	.72
734	5/8 & 7/8	7/8 & 1 1/8	9 3/4	13/16 & 1 1/8	.40	.60	.80
735	3/4 & 7/8	1 & 1 1/8	9 3/4	7/8 & 1 1/8	.44	.66	.88
736	3/4 & 1	1 & 1 1/4	11 1/2	3/4 & 1 1/4	.51	.77	1.02
737	7/8 & 1	1 1/8 & 1 1/4	11 1/2	7/8 & 1 1/4	.58	.87	1.16
738	7/8 & 1 1/8	1 1/8 & 1 3/8	13 1/2	1 1/8 & 1 3/8	.65	.98	1.30
739	1 & 1 1/8	1 1/4 & 1 3/8	13 1/2	1 & 1 3/8	.76	1.14	1.52
739A	1 & 1 1/4	1 1/4 & 1 1/2	13 1/2	1 & 1 1/2	.76	1.14	1.52
739B	1 1/8 & 1 1/4	1 3/8 & 1 1/2	13 1/2	1 1/8 & 1 1/2	.76	1.14	1.52

Number	For Hexagon Head Cap Screws Diameter Inches	Opening Milled Inches	Extreme Length Inches	Thickness Head Inches	Unfinished Each	Semi-finished Each	Finished Each
1026	1/4 & 3/8	7/16 & 9/16	5 3/8	7/32 & 5/16	\$.20	\$.30	\$.40
1027	5/16 & 3/8	1/2 & 9/16	5 3/8	1/4 & 5/16	.21	.32	.42
1028	5/16 & 1/2	1/2 & 5/8	6 1/8	1/4 & 3/8	.23	.35	.46
1029	3/8 & 1/2	9/16 & 5/8	6 1/8	5/16 & 3/8	.24	.36	.48
1030	3/8 & 1/2	9/16 & 3/4	7	5/16 & 7/16	.26	.39	.52
1031	7/16 & 1/2	5/8 & 3/4	7	3/8 & 7/16	.27	.40	.54
1032	7/16 & 9/16	5/8 & 13/16	7 3/4	3/8 & 1/2	.30	.45	.60
1033	1/2 & 9/16	3/4 & 13/16	7 3/4	7/16 & 1/2	.32	.48	.64
1034	1/2 & 5/8	3/4 & 7/8	8 5/8	7/16 & 9/16	.35	.52	.70
1035	9/16 & 5/8	13/16 & 7/8	8 5/8	1/2 & 9/16	.38	.57	.76
1036	9/16 & 3/4	13/16 & 1	10 1/8	1/2 & 5/8	.43	.65	.86
1037	5/8 & 3/4	7/8 & 1	10 1/8	9/16 & 5/8	.47	.70	.94
1038	5/8 & 7/8	7/8 & 1 1/8	11 5/8	9/16 & 3/4	.55	.83	1.10
1039	3/4 & 7/8	1 & 1 1/8	11 5/8	5/8 & 3/4	.61	.92	1.22
1040	3/4 & 1	1 & 1 1/4	13 1/4	5/8 & 7/8	.72	1.08	1.44
1041	7/8 & 1	1 1/8 & 1 1/4	13 1/4	3/4 & 7/8	.79	1.19	1.58
1042	7/8 & 1 1/8	1 1/8 & 1 3/8	14 3/4	3/4 & 1 1/8	.92	1.38	1.84
1043	1 & 1 1/8	1 1/4 & 1 3/8	14 3/4	7/8 & 1 1/8	1.02	1.53	2.04
1044	1 & 1 1/4	1 1/4 & 1 1/2	16 1/4	7/8 & 1 1/16	1.18	1.77	2.36
1045	1 1/8 & 1 1/4	1 3/8 & 1 1/2	16 1/4	1 1/8 & 1 1/16	1.30	1.95	2.60

See page 194 for special conditions and styles of finish

Drop-Forged Wrenches

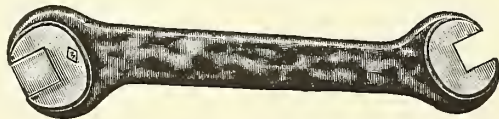
Williams

For Set Screws



22 1/2-Degree Angle. Single Head

Number	For Set Screw Size Inches	Extreme Length Inches	Thickness Heads Inch	Unfinished Each	Semi-finished Each	Finished Each
500	3/16	3	3/16	.08	.12	.16
501	1/4	3 3/4	1/4	.10	.15	.20
502	5/16	4 1/2	5/16	.12	.18	.24
503	3/8	5 1/4	11/16	.15	.23	.30
504	7/16	6	3/8	.20	.30	.40
505	1/2	6 3/4	7/8	.25	.38	.50
506	9/16	7 5/8	1 1/2	.27	.41	.54
507	5/8	8 1/2	1 5/8	.30	.45	.60
508	3/4	9 1/2	1 7/8	.35	.53	.70
509	7/8	10 1/2	1 11/16	.42	.63	.84
510	1	11 1/2	3/4	.50	.75	1.00
511	1 1/8	12 1/2	1 1/16	.60	.90	1.20



22 1/2-Degree Angle. Double Head

Number	For Set Screws Size Inches	Extreme Length Inches	Thickness Heads Inch	Unfinished Each	Semi-finished Each	Finished Each
523	3/16 & 1/4	3 3/8	3/16	.13	.20	.26
524	1/4 & 5/16	3 3/8	3/16	.13	.20	.26
525	1/4 & 5/16	4	3/16	.15	.23	.30
526	1/4 & 3/8	4	3/16	.15	.23	.30
527	5/16 & 3/8	5	11/16	.18	.27	.36
528	5/16 & 3/8	5	11/16	.18	.27	.36
529	3/8 & 1/2	5 7/8	3/8	.22	.33	.44
530	3/8 & 1/2	5 7/8	3/8	.22	.33	.44
531	1/2 & 5/8	6 5/8	1/2	.27	.41	.54
532	1/2 & 5/8	6 5/8	1/2	.27	.41	.54
533	1/2 & 5/8	7 1/2	1/2	.33	.50	.66
534	1/2 & 5/8	7 1/2	1/2	.33	.50	.66
535	5/8 & 3/4	8 3/8	5/8	.40	.60	.80
536	5/8 & 3/4	8 3/8	5/8	.40	.60	.80
537	5/8 & 3/4	10	5/8	.48	.72	.96
538	5/8 & 7/8	10	5/8	.48	.72	.96
539	3/4 & 7/8	11 3/8	3/4	.58	.87	1.16
540	3/4 & 1	11 3/8	3/4	.58	.87	1.16
541	7/8 & 1	12 5/8	3/4	.68	1.02	1.36
542	7/8 & 1 1/8	12 5/8	3/4	.68	1.02	1.36

Short. For Check Nuts and Miscellaneous Uses



15-Degree Angle. Double Head

Number	For U. S. Standard Nut Size Bolts Inch	Openings Milled Inches	Extreme Length Inches	Thickness Heads Inch	Unfinished Each	Semi-finished Each	Finished Each
997	3/4 & 7/8	1 1/4 and 1 7/16	8	1/2 & 1/2	.43	.65	.86

Heavy. For Square Head Cap and Set Screws



15-Degree Angle. Single Head

Number	For Square Head Cap Screws Diameter Inches	For Set Screws Sizes Inches	Openings Milled Inches	Extreme Length Inches	Thickness Heads Inches	Unfinished Each	Semi-finished Each	Finished Each
1000B	...	5/16	5/16	3 1/2	3/16	.09	.13	.18
1001A	1/4	3/8	3/8	4	1/4	.10	.15	.20
1002A	5/16	7/16	7/16	4 3/4	5/16	.12	.18	.24
1002B	3/8	1/2	1/2	4 3/4	3/8	.12	.18	.24
1003C	7/16	9/16	9/16	5	7/16	.14	.21	.28
1004C	1/2	5/8	5/8	5 3/4	3/8	.16	.24	.32
1005C	9/16	...	11/16	6 1/2	7/16	.19	.28	.38
1006C	5/8	3/4	3/4	7 1/4	1/2	.23	.35	.46
1007B	3/4	7/8	7/8	8	9/16	.28	.42	.56
1008C	...	1	1	9 1/2	5/8	.35	.53	.70
1009A	7/8	1 1/8	1 1/8	11	3/4	.46	.69	.92
1010A	1	...	1 1/4	12 1/2	7/8	.60	.90	1.20
1011A	1 1/8	...	1 3/8	14	1 1/16	.76	1.14	1.62
1012A	1 1/4	...	1 1/2	15 1/2	1 1/8	.96	1.44	1.92
1013A	1 3/8	...	1 5/8	17	1 1/8	1.20	1.80	2.40



15 Degree Angle. Double Head

Number	For Square Head Cap Screws Diameter Inches	For Set Screws Sizes Inches	Openings Milled Inches	Extreme Length Inches	Thickness Heads Inches	Unfinished Each	Semi-finished Each	Finished Each
1025C	1/4 & 5/16	3/8 & 7/16	3/8 & 7/16	4 7/8	1/4 & 5/16	.18	.27	.36
1025D	1/4 & 3/8	3/8 & 1/2	3/8 & 1/2	4 7/8	1/4 & 3/8	.18	.27	.36
1026C	5/16 & 3/8	7/16 & 1/2	7/16 & 1/2	5 3/8	5/16 & 3/8	.20	.30	.40
1026D	5/16 & 3/8	7/16 & 1/2	7/16 & 1/2	5 3/8	5/16 & 3/8	.20	.30	.40
1027C	3/8 & 1/2	1/2 & 5/8	1/2 & 5/8	5 3/8	3/8 & 1/2	.21	.32	.42
1028C	3/8 & 1/2	1/2 & 5/8	1/2 & 5/8	6 1/8	3/8 & 1/2	.23	.35	.46
1029C	1/2 & 5/8	5/8 & 3/4	5/8 & 3/4	6 1/8	1/2 & 5/8	.24	.36	.48
1031D	1/2 & 5/8	3/4 & 7/8	3/4 & 7/8	7	5/8 & 3/4	.27	.41	.54
1034C	5/8 & 3/4	3/4 & 7/8	3/4 & 7/8	8 3/8	5/8 & 3/4	.35	.53	.70
1038C	5/8 & 3/4	3/4 & 7/8	3/4 & 7/8	11 5/8	5/8 & 3/4	.55	.83	1.10
1038D	3/4 & 7/8	7/8 & 1 1/8	7/8 & 1 1/8	11 5/8	3/4 & 7/8	.55	.83	1.10
1040C	3/4 & 1	7/8 & 1 1/4	7/8 & 1 1/4	13 1/4	3/4 & 7/8	.72	1.08	1.44
1041C	7/8 & 1	1 1/8 & 1 1/4	1 1/8 & 1 1/4	13 1/4	7/8 & 1	.79	1.19	1.58
1042C	7/8 & 1 1/8	...	1 1/8 & 1 3/8	14 3/4	7/8 & 1 1/8	.92	1.38	1.84
1043C	1 & 1 1/8	...	1 1/4 & 1 3/8	14 3/4	1 & 1 1/8	1.02	1.53	2.04

For U. S. Standard Nuts and Screws



Triple Head

Number	For U. S. Standard Nut Size Bolts Inch	For Set Screws Sizes Inches	Extreme Length Inches	Thickness Heads Inches	Unfinished Each	Semi-finished Each	Finished Each
894A	5/16, 3/8, 1/2	...	5 5/8	3/8	.28	.42	.56
894B	5/16, 7/16, 1/2	...	5 5/8	3/8	.28	.42	.56
894C	3/8, 7/16, 1/2	...	5 5/8	3/8	.28	.42	.56
894D	...	1/2, 5/8, 3/4, 5/8	5 5/8	3/8	.28	.42	.56
894E	...	5/16, 3/8, 3/4, 5/8	5 5/8	3/8	.28	.42	.56

See page 194 for special conditions and styles of finish

SINCE
1848

HAMMACHER SCHLEMMER & CO.

NEW
YORK

Drop-Forged Wrenches

Williams

Machine



Extra Heavy for Planers, Milling Machines, Lathes, Drill Presses, etc.

Number	Large Head for United States Standard Nut Size Bolt Inch	Opening Milled Inches	Small Head for Set Screw Size Inch	Extreme Length Inches	Thickness Heads Inch	Unfinished Each	Semi-finished Each	Finished Each
595	$\frac{3}{8}$	$\frac{11}{16}$	$\frac{3}{8}$	$6\frac{1}{2}$	$\frac{1}{2}$ & $\frac{9}{16}$	.27	.41	.54
595B	$\frac{3}{8}$	$\frac{11}{16}$	$\frac{7}{16}$	$6\frac{1}{2}$	$\frac{1}{2}$ & $\frac{9}{16}$	.27	.41	.54
595C	$\frac{3}{8}$	$\frac{11}{16}$	$\frac{1}{2}$	$6\frac{1}{2}$	$\frac{1}{2}$ & $\frac{9}{16}$	.27	.41	.54
595D	$\frac{7}{16}$	$\frac{23}{32}$	$\frac{3}{8}$	$6\frac{1}{2}$	$\frac{1}{2}$ & $\frac{9}{16}$	.27	.41	.54
595E	$\frac{7}{16}$	$\frac{23}{32}$	$\frac{7}{16}$	$6\frac{1}{2}$	$\frac{1}{2}$ & $\frac{9}{16}$	.27	.41	.54
595F	$\frac{7}{16}$	$\frac{23}{32}$	$\frac{1}{2}$	$6\frac{1}{2}$	$\frac{1}{2}$ & $\frac{9}{16}$	.27	.41	.54
596	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{7}{16}$	$7\frac{1}{2}$	$\frac{9}{16}$ & $\frac{5}{8}$	.33	.50	.66
596B	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{2}$	$7\frac{1}{2}$	$\frac{9}{16}$ & $\frac{5}{8}$	.33	.50	.66
596C	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{9}{16}$	$7\frac{1}{2}$	$\frac{9}{16}$ & $\frac{5}{8}$	.33	.50	.66
596D	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{5}{8}$	$7\frac{1}{2}$	$\frac{9}{16}$ & $\frac{5}{8}$	.33	.50	.66
596E	$\frac{9}{16}$	$\frac{31}{32}$	$\frac{1}{2}$	$7\frac{1}{2}$	$\frac{9}{16}$ & $\frac{5}{8}$	.33	.50	.66
596F	$\frac{9}{16}$	$\frac{31}{32}$	$\frac{7}{16}$	$7\frac{1}{2}$	$\frac{9}{16}$ & $\frac{5}{8}$	.33	.50	.66
596G	$\frac{9}{16}$	$\frac{31}{32}$	$\frac{1}{2}$	$7\frac{1}{2}$	$\frac{9}{16}$ & $\frac{5}{8}$	.33	.50	.66
596H	$\frac{9}{16}$	$\frac{31}{32}$	$\frac{5}{8}$	$7\frac{1}{2}$	$\frac{9}{16}$ & $\frac{5}{8}$	.33	.50	.66
597	$\frac{1}{2}$	$\frac{3}{4}$	$\frac{1}{2}$	$8\frac{1}{2}$	$\frac{11}{16}$ & $\frac{3}{4}$	.41	.62	.82
597B	$\frac{5}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$8\frac{1}{2}$	$\frac{11}{16}$ & $\frac{3}{4}$	.41	.62	.82
597C	$\frac{5}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	$8\frac{1}{2}$	$\frac{11}{16}$ & $\frac{3}{4}$	.41	.62	.82
598	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{3}{4}$	10	$\frac{11}{16}$ & $\frac{3}{4}$	.52	.78	1.04
598B	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{7}{8}$	10	$\frac{11}{16}$ & $\frac{3}{4}$	.52	.78	1.04
598C	$\frac{3}{4}$	$\frac{1}{2}$	1	10	$\frac{11}{16}$ & $\frac{3}{4}$	.52	.78	1.04
598D	$\frac{7}{8}$	$\frac{1}{2}$	$\frac{3}{4}$	10	$\frac{11}{16}$ & $\frac{3}{4}$	.52	.78	1.04
598E	$\frac{7}{8}$	$\frac{1}{2}$	$\frac{7}{8}$	10	$\frac{11}{16}$ & $\frac{3}{4}$	.52	.78	1.04
598F	$\frac{7}{8}$	$\frac{1}{2}$	1	10	$\frac{11}{16}$ & $\frac{3}{4}$	.52	.78	1.04

Textile Machine

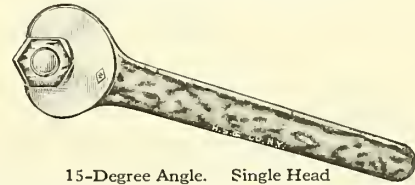


15-Degree Angle. Double Head

Number	For U. S. Standard Hexagon or Square Nuts Size Bolts Inch	Opening Milled Inches	Extreme Length Inches	Thickness Heads Inch	Unfinished Each	Semi-finished Each	Finished Each
760A	$\frac{1}{8}$ & $\frac{1}{4}$	$\frac{5}{16}$ & $\frac{1}{2}$	$4\frac{3}{4}$	$\frac{1}{4}$	.15	.23	.30
760B	$\frac{1}{8}$ & $\frac{1}{4}$	$\frac{3}{16}$ & $\frac{1}{2}$	$4\frac{3}{4}$	$\frac{1}{4}$	.15	.23	.30
760C	$\frac{1}{8}$ & $\frac{1}{4}$	$\frac{13}{32}$ & $\frac{1}{2}$	$4\frac{3}{4}$	$\frac{1}{4}$	.15	.23	.30
761A	$\frac{1}{4}$ & $\frac{3}{8}$	$\frac{1}{2}$ & $\frac{19}{32}$	$5\frac{3}{4}$	$\frac{5}{16}$	.20	.30	.40
761B	$\frac{1}{4}$ & $\frac{3}{8}$	$\frac{1}{2}$ & $\frac{11}{16}$	$5\frac{3}{4}$	$\frac{5}{16}$	.20	.30	.40
761C	$\frac{1}{4}$ & $\frac{3}{8}$	$\frac{19}{32}$ & $\frac{11}{16}$	$5\frac{3}{4}$	$\frac{5}{16}$	.20	.30	.40
762A	$\frac{1}{8}$ & $\frac{1}{4}$	$\frac{5}{16}$ & $\frac{23}{32}$	7	$\frac{3}{8}$	.25	.38	.50
762B	$\frac{3}{8}$ & $\frac{1}{2}$	$\frac{11}{16}$ & $\frac{23}{32}$	7	$\frac{3}{8}$	.25	.38	.50
762C	$\frac{3}{8}$ & $\frac{1}{2}$	$\frac{11}{16}$ & $\frac{7}{8}$	7	$\frac{3}{8}$	.25	.38	.50
763A	$\frac{1}{8}$ & $\frac{1}{4}$	$\frac{5}{16}$ & $\frac{7}{8}$	$8\frac{1}{4}$	$\frac{7}{16}$	.30	.45	.60
763B	$\frac{1}{8}$ & $\frac{1}{4}$	$\frac{23}{32}$ & $\frac{31}{32}$	$8\frac{1}{4}$	$\frac{7}{16}$	.30	.45	.60
763C	$\frac{1}{2}$ & $\frac{3}{4}$	$\frac{7}{8}$ & $\frac{31}{32}$	$8\frac{1}{4}$	$\frac{7}{16}$	.30	.45	.60
764A	$\frac{1}{2}$ & $\frac{3}{4}$	$\frac{7}{8}$ & $\frac{1}{2}$	$9\frac{1}{2}$	$\frac{1}{2}$	.38	.57	.76
764B	$\frac{9}{16}$ & $\frac{5}{8}$	$\frac{31}{32}$ & $\frac{1}{2}$	$9\frac{1}{2}$	$\frac{1}{2}$	.38	.57	.76
764C	$\frac{9}{16}$ & $\frac{5}{8}$	$\frac{31}{32}$ & $\frac{1}{4}$	$9\frac{1}{2}$	$\frac{1}{2}$	.38	.57	.76
765A	$\frac{5}{8}$ & $\frac{3}{4}$	$\frac{1}{2}$ & $\frac{1}{4}$	11	$\frac{9}{16}$	.50	.75	1.00
765B	$\frac{5}{8}$ & $\frac{3}{4}$	$\frac{1}{2}$ & $\frac{1}{4}$	11	$\frac{9}{16}$	.50	.75	1.00
765C	$\frac{3}{4}$ & $\frac{7}{8}$	$\frac{1}{2}$ & $\frac{1}{4}$	11	$\frac{9}{16}$	.50	.75	1.00

Check Nut or "Thin"

For Check, Jam or Lock Nuts, etc.



15-Degree Angle. Single Head

Number	For U. S. Standard Nuts Size Bolt Inch	Opening Milled Inches	Extreme Length Inches	Thickness Head Inch	Unfinished Each	Semi-finished Each	Finished Each
601	$\frac{1}{4}$	$\frac{1}{2}$	4	$\frac{5}{32}$	.10	.15	.20
602	$\frac{5}{16}$	$\frac{13}{32}$	$4\frac{1}{2}$	$\frac{11}{64}$	.11	.17	.22
603	$\frac{3}{8}$	$\frac{11}{16}$	$5\frac{1}{8}$	$\frac{3}{16}$	.13	.20	.26
604	$\frac{7}{16}$	$\frac{33}{64}$	$5\frac{7}{8}$	$\frac{3}{16}$	.15	.23	.30
605	$\frac{1}{2}$	$\frac{7}{8}$	$6\frac{5}{8}$	$\frac{1}{4}$	.18	.27	.36
606	$\frac{9}{16}$	$\frac{31}{32}$	$7\frac{1}{2}$	$\frac{9}{32}$	.22	.33	.44
607	$\frac{5}{8}$	$1\frac{1}{16}$	$8\frac{1}{2}$	$\frac{5}{16}$	.28	.42	.56
608	$\frac{3}{4}$	$1\frac{1}{4}$	10	$\frac{3}{8}$	.36	.54	.72
609	$\frac{7}{8}$	$1\frac{7}{8}$	$11\frac{1}{2}$	$\frac{7}{16}$	.46	.69	.92
610	1	$1\frac{5}{8}$	$13\frac{1}{4}$	$\frac{1}{2}$	.60	.90	1.20

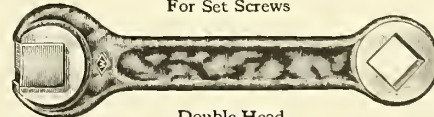


15 Degree Angle—Double Head

Number	For U. S. Standard Nuts Size Bolts Inches	Opening Milled Inches	Extreme Length Inches	Thickness Head Inch	Unfinished Each	Semi-finished Each	Finished Each
623	$\frac{3}{16}$ & $\frac{1}{4}$	$\frac{13}{32}$ & $\frac{1}{2}$	$4\frac{3}{8}$	$\frac{9}{64}$ & $\frac{5}{32}$	.14	.21	.28
624	$\frac{3}{16}$ & $\frac{1}{4}$	$\frac{13}{32}$ & $\frac{1}{2}$	$4\frac{3}{8}$	$\frac{9}{64}$ & $\frac{5}{32}$	.14	.21	.28
625	$\frac{1}{4}$ & $\frac{3}{8}$	$\frac{1}{2}$ & $\frac{11}{16}$	$5\frac{1}{2}$	$\frac{3}{32}$ & $\frac{1}{16}$	.19	.29	.38
626	$\frac{1}{4}$ & $\frac{3}{8}$	$\frac{1}{2}$ & $\frac{11}{16}$	$5\frac{1}{2}$	$\frac{3}{32}$ & $\frac{1}{16}$	.19	.29	.38
627	$\frac{5}{16}$ & $\frac{3}{8}$	$\frac{19}{32}$ & $\frac{11}{16}$	$5\frac{1}{2}$	$\frac{3}{32}$ & $\frac{1}{16}$	.19	.29	.38
628	$\frac{5}{16}$ & $\frac{3}{8}$	$\frac{19}{32}$ & $\frac{23}{32}$	$5\frac{1}{2}$	$\frac{3}{32}$ & $\frac{1}{16}$	.19	.29	.38
629	$\frac{3}{8}$ & $\frac{1}{2}$	$\frac{11}{16}$ & $\frac{23}{32}$	$6\frac{7}{8}$	$\frac{1}{16}$ & $\frac{3}{32}$	.25	.38	.50
630	$\frac{3}{8}$ & $\frac{1}{2}$	$\frac{11}{16}$ & $\frac{7}{8}$	$6\frac{7}{8}$	$\frac{1}{16}$ & $\frac{3}{32}$	.25	.38	.50
631	$\frac{7}{16}$ & $\frac{1}{2}$	$\frac{23}{32}$ & $\frac{7}{8}$	$6\frac{7}{8}$	$\frac{1}{16}$ & $\frac{3}{32}$	.25	.38	.50
632	$\frac{7}{16}$ & $\frac{1}{2}$	$\frac{23}{32}$ & $\frac{11}{16}$	$8\frac{1}{2}$	$\frac{3}{32}$ & $\frac{1}{16}$	.33	.50	.66
633	$\frac{1}{2}$ & $\frac{3}{4}$	$\frac{7}{8}$ & $\frac{31}{32}$	$8\frac{1}{2}$	$\frac{3}{32}$ & $\frac{1}{16}$	.33	.50	.66
634	$\frac{1}{2}$ & $\frac{3}{4}$	$\frac{7}{8}$ & $1\frac{1}{16}$	$8\frac{1}{2}$	$\frac{3}{32}$ & $\frac{1}{16}$	.33	.50	.66
635	$\frac{9}{16}$ & $\frac{5}{8}$	$\frac{31}{32}$ & $1\frac{1}{16}$	$10\frac{3}{8}$	$\frac{5}{32}$ & $\frac{1}{16}$	.44	.66	.88
636	$\frac{9}{16}$ & $\frac{5}{8}$	$\frac{31}{32}$ & $1\frac{1}{4}$	$10\frac{3}{8}$	$\frac{5}{32}$ & $\frac{1}{16}$	.44	.66	.88
637	$\frac{5}{8}$ & $\frac{3}{4}$	$1\frac{1}{16}$ & $1\frac{1}{4}$	$10\frac{3}{8}$	$\frac{5}{32}$ & $\frac{1}{16}$	.44	.66	.88
638	$\frac{5}{8}$ & $\frac{3}{4}$	$1\frac{1}{16}$ & $1\frac{1}{2}$	$12\frac{3}{8}$	$\frac{7}{16}$ & $\frac{1}{8}$	.60	.90	1.20
639	$\frac{3}{4}$ & $\frac{7}{8}$	$1\frac{1}{2}$ & $1\frac{7}{8}$	$12\frac{3}{8}$	$\frac{7}{16}$ & $\frac{1}{8}$	.60	.90	1.20
640	$\frac{3}{4}$ & 1	$1\frac{1}{4}$ & $1\frac{5}{8}$	$12\frac{3}{8}$	$\frac{7}{16}$ & $\frac{1}{8}$	.60	.90	1.20

Tool Post

For Set Screws



Double Head

Number	Open End for Set Screw Size Inch	Closed End for Set Screw Size Inch	Extreme Length Inches	Thickness Heads Inch	Unfinished Each	Semi-finished Each	Finished Each
554	$\frac{1}{16}$	$\frac{7}{16}$	$5\frac{1}{2}$	$\frac{1}{2}$ & $\frac{1}{2}$	.21	.32	.42
555	$\frac{1}{8}$	$\frac{1}{2}$	6	$\frac{9}{16}$ & $\frac{9}{16}$	.23	.35	.46
555B	$\frac{1}{8}$	$\frac{1}{2}$	6	$\frac{9}{16}$ & $\frac{9}{16}$	.23	.35	.46
555C	$\frac{1}{8}$	$\frac{1}{2}$	6	$\frac{9}{16}$ & $\frac{9}{16}$	.23	.35	.46
556	$\frac{5}{8}$	$\frac{5}{8}$	$6\frac{3}{4}$	$\frac{5}{8}$ & $\frac{5}{8}$	.30	.45	.60
556B	$\frac{11}{16}$	$\frac{11}{16}$	$6\frac{3}{4}$	$\frac{5}{8}$ & $\frac{5}{8}$	.30	.45	.60
556C	$\frac{11}{16}$	$\frac{11}{16}$	$6\frac{3}{4}$	$\frac{5}{8}$ & $\frac{5}{8}$	.30	.45	.60
557	$\frac{3}{4}$	$\frac{3}{4}$	$7\frac{1}{2}$	$\frac{11}{16}$ & $\frac{11}{16}$	.35	.52	.70

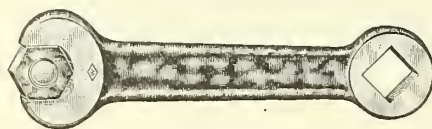
See page 194 for special conditions and styles of finish

Drop-Forged Wrenches

Williams

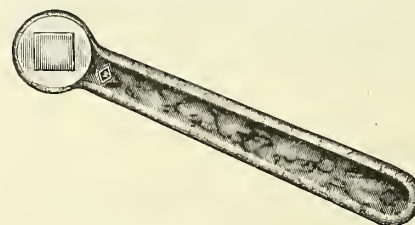
Tool Post

For U. S. Standard Nuts and Set Screws



Double Head

Square Box, for Set Screws



22½-Degrees Angle Single Head

Number	Open End for U. S. Standard Nut		Closed End for		Extreme Length Inches	Thickness Heads Inch	Unfinished Each	Semi- finished Each	Finished Each
	Size Bolt Inches	Opening Inches	Set Screw Size Inch	Length Inches					
562	3/8	1 1/16	9/16	6 1/2	1 1/2	5/8	.25	.38	.50
563	1/2	1 7/8	1 1/16	7	1 9/16	5/8	.30	.45	.60
563B	1/2	1 7/8	1 1/2	7	1 9/16	5/8	.30	.45	.60
563C	1/2	1 7/8	9/8	7	1 9/16	5/8	.30	.45	.60
563D	1/2	1 7/8	5/8	7	1 9/16	5/8	.30	.45	.60
564	5/8	1 11/16	5/8	7 1/2	1 11/16	5/8	.35	.52	.70
565	5/8	1 11/16	3/4	8	1 11/16	5/8	.40	.60	.80
566	3/4	1 11/4	3/4	9	1 3/4	3/4	.50	.75	1.00
566B	3/4	1 11/4	7/8	9	1 3/4	3/4	.50	.75	1.00
567	3/4	1 11/4	1	10	1 3/4	3/4	.60	.90	1.20
567B	7/8	1 7/8	7/8	10	1 7/8	7/8	.60	.90	1.20
567C	7/8	1 7/8	1	10	1 7/8	7/8	.60	.90	1.20
568	1	1 5/8	7/8	11	1 15/16	15/16	.75	1.13	1.50
568B	1	1 5/8	1	11	1 15/16	15/16	.75	1.13	1.50
568C	1 1/8	1 11/8	1	11	1 15/16	15/16	.75	1.13	1.50
568D	1 1/4	2	1	11	1 15/16	15/16	.75	1.13	1.50

Number	For Set Screw Size Inch	Extreme Length Inches	Head Thick- ness Inch	Head Outside Diameter Inches	Unfin- ished Each	Semi- finished Each	Finished Each
580	3/16	3	1/4	1 1/32	.09	.12	.18
581	1/4	3 3/8	9/32	5/8	.10	.15	.20
582	5/16	3 3/4	5/16	3/2	.11	.17	.22
583	3/8	4 1/4	3/8	2 1/2	.13	.20	.26
584	7/16	4 7/8	7/16	3 1/2	.16	.24	.32
585	1/2	5 1/2	3/2	1 3/2	.19	.28	.38
586	9/16	6 1/4	1/2	1 7/32	.22	.33	.44
587	5/8	7	9/16	1 11/32	.26	.39	.52
588	3/4	8	5/8	1 1/16	.30	.45	.60
589	7/8	9	11/16	1 3/4	.36	.54	.72
590	1	10	3/4	2	.44	.66	.88

Hexagon Box Wrenches

For U. S. Standard Nuts



15-Degree Angle. Single Head



15-Degree Angle. Double Head

Number	For U. S. Standard Nut Size Inches	Short Diameter Opening Inches	Extreme Length Inches	Head Thickness Inches	Head Outside Diameter Inches	Unfin- ished Each	Semi- finished Each	Fin- ished Each
801	1/4	1/2	4	1/4	3/32	.10	.15	.20
802	5/16	3/4	4 7/8	9/32	1 3/32	.12	.18	.24
803	3/8	7/8	5 7/8	5/16	1 1/4	.14	.21	.28
804	1/2	1 1/8	6 7/8	11/32	1 3/8	.17	.25	.34
805	5/8	1 5/8	7 3/4	13/32	1 1/2	.20	.30	.40
806	3/4	1 3/4	8 3/4	1 1/8	1 5/8	.26	.39	.52
807	7/8	1 7/8	9 7/8	1 1/2	1 3/4	.32	.48	.64
808	1	2	11 1/2	1 5/8	2 1/8	.42	.63	.84
809	1 1/8	2 1/4	13 1/4	1 3/4	2 3/8	.58	.87	1.16
810	1 1/4	2 3/4	15	2	2 5/8	.75	1.13	1.50
811	1 1/2	3	17	2 1/8	3	1.00	1.50	2.00
812	1 3/4	3 1/2	19	2 3/8	3 1/4	1.25	1.88	2.50
813	1 7/8	3 3/4	21	2 5/8	3 1/2	1.62	2.43	3.24
814	2	4	23	3	3 3/4	2.00	3.00	4.00
815	2 1/8	4 1/2	25	3 1/8	4	2.50	3.75	5.00
816	2 1/4	5	27	3 1/4	4 1/4	3.00	4.50	6.00
817	2 3/8	5 1/2	30 1/2	3 3/8	4 3/4	4.40	6.60	8.80
818	2 1/2	6	34	3 1/2	5 1/4	6.00	9.00	12.00
819	2 7/8	6 3/4	38	3 3/4	5 7/8	7.60	11.40	15.20
819A	3	7 1/2	42	4	6 1/2	10.00	15.00	20.00
820	3 1/4	8	46	4 1/8	7	13.00	19.50	26.00

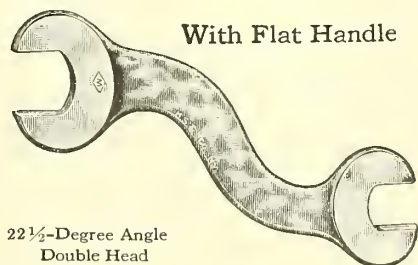
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825	1/4	1/2	4 7/8	1/4	.18	.27	.36
826	5/16	3/4	5 7/8	1/4	.20	.30	.40
827	3/8	7/8	6 7/8	5/16	.22	.33	.44
828	1/2	1 1/8	7 7/8	11/32	.24	.36	.48
829	5/8	1 5/8	8 7/8	3/2	.26	.39	.52
830	3/4	2	9 7/8	1 1/8	.28	.42	.56
831	7/8	2 1/4	10 7/8	1 1/4	.30	.45	.60
832	1	2 3/4	11 7/8	1 1/2	.32	.48	.64
833	1 1/8	3 1/4	12 7/8	1 3/4	.36	.54	.72
834	1 1/4	3 3/4	13 7/8	1 7/8	.40	.60	.80
835	1 1/2	4	14 7/8	2	.44	.66	.88
836	1 3/4	4 1/2	15 7/8	2 1/8	.51	.77	1.02
837	1 7/8	5	16 7/8	2 1/4	.58	.87	1.16
838	2	5 1/2	17 7/8	2 3/8	.65	.98	1.30
839	2 1/8	6	18 7/8	2 1/2	.76	1.14	1.52
840	2 1/4	6 1/2	19 7/8	2 3/4	.88	1.32	1.76
841	2 3/8	7	20 7/8	3	1.00	1.50	2.00
842	2 1/2	7 1/2	21 7/8	3 1/4	1.18	1.77	2.36
843	2 7/8	8	22 7/8	3 1/2	1.36	2.04	2.72
844	3	8 1/2	23 7/8	3 3/4	1.55	2.33	3.10
845	3 1/4	9	24 7/8	3 1/2	1.80	2.70	3.60

See page 194 for special conditions and styles of finish

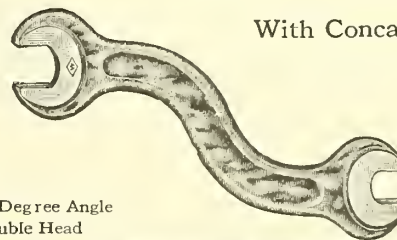
Drop-Forged Wrenches

Williams "S"

For U. S. Standard Nuts



With Flat Handle

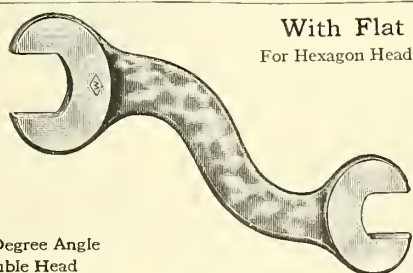
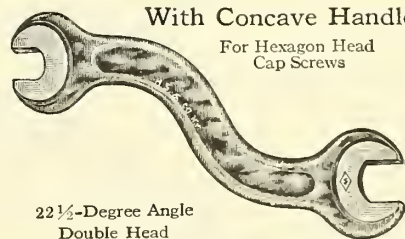
22 1/2-Degree Angle
Double Head

With Concave Handle

22 1/2-Degree Angle
Double Head

Number	For U. S. Standard Nuts Size Bolts Inches	Openings Milled Inches	Extreme Length Inches	Thick- ness Heads Inch	Unfin- ished Each	Semi- finished Each	Fin- ished Each
661A	1/8 & 3/16	5/16 & 13/32	4	9/32	.13	.20	.26
661B	1/8 & 1/4	5/16 & 1 1/2	4	9/32	.13	.20	.26
661C	3/16 & 1/4	5/16 & 1 1/2	4	9/32	.13	.20	.26
662A	3/16 & 5/16	5/16 & 1 1/2	5	5/16	.17	.26	.34
662B	1/4 & 5/16	5/16 & 1 1/2	5	5/16	.17	.26	.34
662C	1/4 & 3/8	5/16 & 1 1/2	5	5/16	.17	.26	.34
663A	5/16 & 3/8	5/16 & 1 1/2	6 1/4	3/8	.22	.33	.44
663B	5/16 & 1/2	5/16 & 1 1/2	6 1/4	3/8	.22	.33	.44
663C	3/8 & 1/2	5/16 & 1 1/2	6 1/4	3/8	.22	.33	.44
664A	3/8 & 1/2	5/16 & 1 1/2	7 1/2	1/2	.28	.42	.56
664B	1/2 & 1/2	5/16 & 1 1/2	7 1/2	1/2	.28	.42	.56
664C	1/2 & 5/8	5/16 & 1 1/2	7 1/2	1/2	.28	.42	.56
665A	1/2 & 5/8	5/16 & 1 1/2	9	1/2	.36	.54	.72
665B	1/2 & 5/8	5/16 & 1 1/2	9	1/2	.36	.54	.72
665C	5/8 & 5/8	5/16 & 1 1/2	9	1/2	.36	.54	.72
666A	5/8 & 3/4	5/16 & 1 1/2	10 1/2	1/2	.48	.72	.96
666B	5/8 & 3/4	5/16 & 1 1/2	10 1/2	1/2	.48	.72	.96
666C	3/4 & 3/4	5/16 & 1 1/2	10 1/2	1/2	.48	.72	.96
667A	3/4 & 7/8	5/16 & 1 1/2	12	5/8	.72	1.08	1.44
667B	3/4 & 1	5/16 & 1 1/2	12	5/8	.72	1.08	1.44
667C	7/8 & 1	5/16 & 1 1/2	12	5/8	.72	1.08	1.44
668A	7/8 & 1 1/8	5/16 & 1 1/2	14	3/4	1.10	1.65	2.20
668B	1 & 1 1/8	5/16 & 1 1/2	14	3/4	1.10	1.65	2.20
668C	1 & 1 1/4	5/16 & 2	14	3/4	1.10	1.65	2.20

Number	For U. S. Standard Nuts Size Bolts Inches	Openings Milled Inches	Extreme Length Inches	Thick- ness Heads Inch	Unfin- ished Each	Semi- finished Each	Fin- ished Each
860A	1/8 & 3/16	5/16 & 13/32	3 5/8	9/32	.13	.20	.26
861A	1/8 & 1/4	5/16 & 1 1/2	4 7/8	9/32	.18	.27	.36
861B	3/16 & 1/4	5/16 & 1 1/2	4 7/8	9/32	.18	.27	.36
861C	3/16 & 5/16	5/16 & 1 1/2	4 7/8	9/32	.18	.27	.36
861X	1/4 & 5/16	5/16 & 1 1/2	4 7/8	9/32	.18	.27	.36
862A	1/4 & 3/8	5/16 & 1 1/2	5 3/4	11/32	.21	.32	.42
863A	5/16 & 3/8	5/16 & 1 1/2	6 1/2	11/32	.25	.38	.50
863B	5/16 & 1/2	5/16 & 1 1/2	6 1/2	11/32	.25	.38	.50
864A	3/8 & 1/2	5/16 & 1 1/2	7 1/4	1 1/8	.30	.45	.60
864B	3/8 & 1/2	5/16 & 1 1/2	7 1/4	1 1/8	.30	.45	.60
865A	1/2 & 1/2	5/16 & 1 1/2	8	1 1/8	.38	.57	.76
865B	1/2 & 5/8	5/16 & 1 1/2	8	1 1/8	.38	.57	.76
865C	1/2 & 5/8	5/16 & 1 1/2	8	1 1/8	.38	.57	.76
865X	1/2 & 5/8	5/16 & 1 1/2	8	1 1/8	.38	.57	.76
866A	5/8 & 5/8	5/16 & 1 1/2	10	1 1/8	.50	.75	1.00
866B	5/8 & 3/4	5/16 & 1 1/2	10	1 1/8	.50	.75	1.00
866C	5/8 & 3/4	5/16 & 1 1/2	10	1 1/8	.50	.75	1.00
867A	5/8 & 7/8	5/16 & 1 1/2	11 1/2	1 1/8	.75	1.13	1.50
867B	3/4 & 7/8	5/16 & 1 1/2	11 1/2	1 1/8	.75	1.13	1.50
868A	3/4 & 1	5/16 & 1 1/2	14 1/2	3/4	1.15	1.73	2.30
868B	7/8 & 1	5/16 & 1 1/2	14 1/2	3/4	1.15	1.73	2.30
868C	7/8 & 1 1/8	5/16 & 1 1/2	14 1/2	3/4	1.15	1.73	2.30

With Flat Handle
For Hexagon Head Cap Screws22 1/2-Degree Angle
Double HeadWith Concave Handle
For Hexagon Head
Cap Screws22 1/2-Degree Angle
Double Head

Number	For Hexagon Head Cap Screws, Diameter Screws, Inches	Openings Milled Inches	Extreme Length Inches	Thick- ness Heads Inch	Unfin- ished Each	Semi- finished Each	Fin- ished Each
661D	1/8 & 3/16	5/16 & 3/8	4	9/32	.13	.20	.26
661E	1/8 & 1/4	5/16 & 1/2	4	9/32	.13	.20	.26
661F	3/16 & 1/4	5/16 & 1/2	4	9/32	.13	.20	.26
661G	3/16 & 5/16	5/16 & 1/2	4	9/32	.13	.20	.26
662D	1/4 & 5/16	5/16 & 1/2	5	5/16	.17	.26	.34
662E	1/4 & 3/8	5/16 & 1/2	5	5/16	.17	.26	.34
662F	5/16 & 3/8	5/16 & 1/2	5	5/16	.17	.26	.34
662G	5/16 & 1/2	5/16 & 1/2	5	5/16	.17	.26	.34
663D	3/8 & 1/2	5/16 & 1/2	6 1/4	3/8	.22	.33	.44
663E	3/8 & 1/2	5/16 & 1/2	6 1/4	3/8	.22	.33	.44
663F	1/2 & 1/2	5/16 & 1/2	6 1/4	3/8	.22	.33	.44
663G	1/2 & 5/8	5/16 & 1/2	6 1/4	3/8	.22	.33	.44
664D	1/2 & 5/8	5/16 & 1/2	7 1/2	1/2	.28	.42	.56
664E	1/2 & 5/8	5/16 & 1/2	7 1/2	1/2	.28	.42	.56
664F	5/8 & 5/8	5/16 & 1/2	7 1/2	1/2	.28	.42	.56
665D	5/8 & 3/4	5/16 & 1/2	9	1/2	.36	.54	.72
665E	5/8 & 3/4	5/16 & 1/2	9	1/2	.36	.54	.72
665F	5/8 & 7/8	5/16 & 1/2	9	1/2	.36	.54	.72
666D	3/4 & 1	5/16 & 1/2	10 1/2	1/2	.48	.72	.96
666E	3/4 & 1	5/16 & 1/2	10 1/2	1/2	.48	.72	.96
666F	7/8 & 1 1/8	5/16 & 1/2	10 1/2	1/2	.48	.72	.96
667D	1 & 1 1/8	5/16 & 1/2	12	5/8	.72	1.08	1.44
667E	1 & 1 1/4	5/16 & 1/2	12	5/8	.72	1.08	1.44
667F	1 1/8 & 1 1/4	5/16 & 1/2	12	5/8	.72	1.08	1.44

Number	For Hexagon Head Cap Screws, Diameter Screws, Inches	Openings Milled Inches	Extreme Length Inches	Thick- ness Heads Inch	Unfin- ished Each	Semi- finished Each	Fin- ished Each
861D	1/8 & 1/4	3/8 & 7/16	4 7/8	9/32	.18	.27	.36
862D	1/8 & 5/16	3/8 & 1/2	5 3/4	11/32	.21	.32	.42
862E	3/16 & 3/8	3/8 & 1/2	5 3/4	11/32	.21	.32	.42
862F	3/16 & 5/16	3/8 & 1/2	5 3/4	11/32	.21	.32	.42
862G	1/4 & 3/8	3/8 & 1/2	5 3/4	11/32	.21	.32	.42
863D	5/16 & 3/8	3/8 & 1/2	6 1/2	13/32	.25	.38	.50
863E	5/16 & 1/2	3/8 & 1/2	6 1/2	13/32	.25	.38	.50
864D	3/8 & 1/2	3/8 & 1/2	7 1/4	1 1/8	.30	.45	.60
864E	3/8 & 1/2	3/8 & 1/2	7 1/4	1 1/8	.30	.45	.60
864F	5/8 & 1/2	3/8 & 1/2	7 1/4	1 1/8	.30	.45	.60
865D	1/2 & 1/2	3/8 & 1/2	8	1 1/8	.38	.57	.76
865E	1/2 & 5/8	3/8 & 1/2	8	1 1/8	.38	.57	.76
865F	1/2 & 5/8	3/8 & 1/2	8	1 1/8	.38	.57	.76
865G	1/2 & 5/8	3/8 & 1/2	8	1 1/8	.38	.57	.76
866D	1/2 & 3/4	3/8 & 1/2	10	1 1/8	.50	.75	1.00
866E	1/2 & 3/4	3/8 & 1/2	10	1 1/8	.50	.75	1.00
866F	5/8 & 3/4	3/8 & 1/2	10	1 1/8	.50	.75	1.00
866G	5/8 & 3/4	3/8 & 1/2	10	1 1/8	.50	.75	1.00
867D	5/8 & 7/8	3/8 & 1/2	11 1/2	1 1/8	.75	1.13	1.50
867E	3/4 & 7/8	3/8 & 1/2	11 1/2	1 1/8	.75	1.13	1.50
867F	3/4 & 1	3/8 & 1/2	11 1/2	1 1/8	.75	1.13	1.50
867G	7/8 & 1	3/8 & 1/2	11 1/2	1 1/8	.75	1.13	1.50
868D	7/8 & 1 1/8	3/8 & 1/2	14 1/2	3/4	1.15	1.73	2.30
868E	7/8 & 1 1/4	3/8 & 1/2	14 1/2	3/4	1.15	1.73	2.30
868F	1 & 1 1/8	3/8 & 1/2	14 1/2	3/4	1.15	1.73	2.30
868G	1 & 1 1/4	3/8 & 1/2	14 1/2	3/4	1.15	1.73	2.30
868X	1 1/8 & 1 1/4	3/8 & 1/2	14 1/2	3/4	1.15	1.73	2.30

See page 194 for special conditions and styles of finish

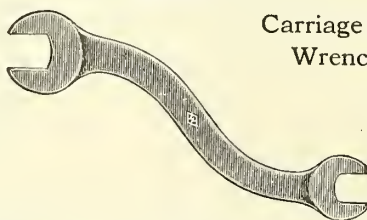
SINCE
1848

HAMMACHER SCHLEMMER & Co.

NEW
YORK

Drop-Forged Wrenches

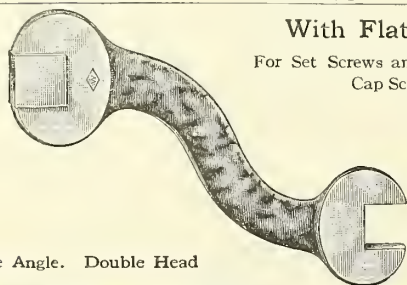
Williams "S"



Carriage Makers or Light Service
Wrenches for Manufacturers
Standard Nuts

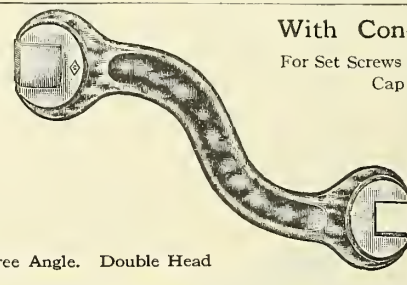
22½-Degree Angle. Double Head. Long and Light

Number	Old Number	Openings Milled Inches	Extreme Length Inches	Thickness Heads Inch	Unfinished Each	Semi-finished Each	Finished Each	Number
675B	475B	3/8 & 7/16	6 1/4	3/32	\$.13	\$.20	\$.26	675B
675A	475A	3/8 & 1/2	6 1/4	3/32	.13	.20	.26	675A
675	475	13/32 & 1/2	6 1/4	3/32	.13	.20	.26	675
677B	477B	1/2 & 9/16	7 1/8	1/4	.17	.25	.34	677B
677	477	1/2 & 5/8	7 1/8	1/4	.17	.25	.34	677
679A	479A	9/16 & 11/16	8 1/4	5/16	.22	.33	.44	679A
679	479	5/8 & 11/16	8 1/4	5/16	.22	.33	.44	679
681	481	11/16 & 27/32	9 1/4	3/8	.28	.42	.56	681
681B	481B	11/16 & 3/4	9 1/4	3/8	.28	.42	.56	681B
681A	481A	3/4 & 7/8	9 1/4	3/8	.28	.42	.56	681A
683	483	27/32 & 15/16	10 3/8	7/16	.34	.51	.68	683
683B	483B	27/32 & 1	10 3/8	7/16	.34	.51	.68	683B
683A	483A	15/16 & 1	10 3/8	7/16	.34	.51	.68	683A
685	485	1 & 1 1/8	12	1 1/2	.44	.66	.88	685
685A	485A	1 & 1 1/4	12	1 1/2	.44	.66	.88	685A
685C	485C	1 1/8 & 1 1/4	12	1 1/2	.44	.66	.88	685C
685B	485B	1 1/8 & 1 1/4	12	1 1/2	.44	.66	.88	685B



With Flat Handle

For Set Screws and Square Head
Cap Screws



With Concave Handle

For Set Screws and Square Head
Cap Screws

22½-Degree Angle. Double Head

22½-Degree Angle. Double Head

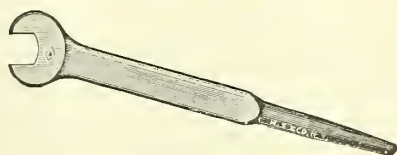
For Square Head Cap Screws									For Square Head Cap Screws								
Number	For Set Screws Inches	Diameter Screws Inches	Openings Milled Inches	Extreme Length Inches	Thick- ness Heads Inch	Unfin- ished Each	Semi- finished Each	Fin- ished Each	Number	For Set Screws Inches	Diameter Screws Inches	Openings Milled Inches	Extreme Length Inches	Unfin- ished Each	Semi- finished Each	Fin- ished Each	
661H	1/4 & 5/16	.....	1/4 & 5/16	4	3/32	\$.13	\$.20	\$.26	860H	1/4 & 5/16	.....	1/4 & 5/16	3 3/8	\$.13	\$.20	\$.26	
661J	1/4 & 3/8	.....	1/4 & 3/8	4	3/32	.13	.20	.26	860J	1/4 & 3/8	.....	1/4 & 3/8	3 5/8	.13	.20	.26	
661K	5/16 & 3/8	.....	5/16 & 3/8	4	3/32	.13	.20	.26	860K	5/16 & 3/8	.....	5/16 & 3/8	3 5/8	.13	.20	.26	
661L	5/16 & 7/16	.....	5/16 & 7/16	4	9/32	.13	.20	.26	861H	5/16 & 7/16	.....	5/16 & 7/16	4 7/8	.18	.27	.36	
662H	3/8 & 1/2	.....	3/8 & 1/2	5	5/16	.17	.26	.34	861J	3/8 & 1/2	.....	3/8 & 1/2	4 7/8	.18	.27	.36	
662J	3/8 & 1/2	.....	3/8 & 1/2	5	5/16	.17	.26	.34	862H	3/8 & 1/2	.....	3/8 & 1/2	5 3/4	.21	.32	.42	
662K	7/16 & 1/2	.....	7/16 & 1/2	5	5/16	.17	.26	.34	862J	7/16 & 1/2	.....	7/16 & 1/2	5 3/4	.21	.32	.42	
662L	7/16 & 9/16	.....	7/16 & 9/16	5	5/16	.17	.26	.34	862K	7/16 & 9/16	.....	7/16 & 9/16	5 3/4	.21	.32	.42	
663H	1/2 & 9/16	.....	1/2 & 9/16	6 1/4	3/8	.22	.33	.44	863H	1/2 & 9/16	.....	1/2 & 9/16	6 1/2	.25	.38	.50	
663J	1/2 & 5/8	.....	1/2 & 5/8	6 1/4	3/8	.22	.33	.44	863J	1/2 & 5/8	.....	1/2 & 5/8	6 1/2	.25	.38	.50	
663K	9/16 & 5/8	.....	9/16 & 5/8	6 1/4	3/8	.22	.33	.44	864H	9/16 & 5/8	.....	9/16 & 5/8	7 1/4	.30	.45	.60	
663M	7/16 & 9/16	.....	7/16 & 9/16	6 1/4	3/8	.22	.33	.44	864M	7/16 & 9/16	.....	7/16 & 9/16	7 1/4	.30	.45	.60	
664H	9/16 & 3/4	.....	9/16 & 3/4	7 1/2	7/16	.28	.42	.56	864J	9/16 & 3/4	.....	9/16 & 3/4	7 1/4	.30	.45	.60	
664M	1/2 & 5/8	.....	1/2 & 5/8	7 1/2	7/16	.28	.42	.56	864R	1/2 & 5/8	.....	1/2 & 5/8	7 1/4	.30	.45	.60	
664J	5/8 & 3/4	.....	5/8 & 3/4	7 1/2	7/16	.28	.42	.56	865H	5/8 & 3/4	.....	5/8 & 3/4	8	.38	.57	.76	
664K	5/8 & 7/8	.....	5/8 & 7/8	7 1/2	7/16	.28	.42	.56	865J	5/8 & 7/8	.....	5/8 & 7/8	8	.38	.57	.76	
664P	9/16 & 5/8	.....	9/16 & 5/8	7 1/2	7/16	.28	.42	.56	865M	9/16 & 5/8	.....	9/16 & 5/8	8	.38	.57	.76	
664R	11/16 & 3/4	.....	11/16 & 3/4	7 1/2	7/16	.28	.42	.56	865R	11/16 & 3/4	.....	11/16 & 3/4	8	.38	.57	.76	
665H	3/4 & 7/8	.....	3/4 & 7/8	9	1/2	.36	.54	.72	865K	3/4 & 7/8	.....	3/4 & 7/8	8	.38	.57	.76	
665J	3/4 & 1	.....	3/4 & 1	9	1/2	.36	.54	.72	866H	3/4 & 1	.....	3/4 & 1	10	.50	.75	1.00	
665K	7/8 & 1	.....	7/8 & 1	9	1/2	.36	.54	.72	866J	7/8 & 1	.....	7/8 & 1	10	.50	.75	1.00	
666M	5/8 & 7/8	.....	5/8 & 7/8	10 1/2	9/16	.48	.72	.96	867H	5/8 & 7/8	.....	5/8 & 7/8	11 1/2	.75	1.13	1.50	
666H	7/8 & 1 1/8	.....	7/8 & 1 1/8	10 1/2	9/16	.48	.72	.96	867J	7/8 & 1 1/8	.....	7/8 & 1 1/8	11 1/2	.75	1.13	1.50	
666R	3/4 & 1	.....	3/4 & 1	10 1/2	9/16	.48	.72	.96	867K	1 & 1 1/4	.....	1 & 1 1/4	11 1/2	.75	1.13	1.50	
666J	1 & 1 1/8	.....	1 & 1 1/8	10 1/2	9/16	.48	.72	.96	867L	1 1/8 & 1 1/4	.....	1 1/8 & 1 1/4	11 1/2	.75	1.13	1.50	
666K	1 & 1 1/4	.....	1 & 1 1/4	10 1/2	9/16	.48	.72	.96	868M	7/8 & 1 1/8	.....	7/8 & 1 1/8	14 1/2	1.15	1.73	2.30	
667H	1 1/8 & 1 1/4	.....	1 1/8 & 1 1/4	12	5/8	.72	1.08	1.44	868K	7/8 & 1 1/4	.....	7/8 & 1 1/4	14 1/2	1.15	1.73	2.30	
667M	7/8 & 1 1/8	.....	7/8 & 1 1/8	12	5/8	.72	1.08	1.44	868R	1 & 1 1/8	.....	1 & 1 1/8	14 1/2	1.15	1.73	2.30	
667R	1 & 1 1/8	.....	1 & 1 1/8	12	5/8	.72	1.08	1.44	868U	1 & 1 1/4	.....	1 & 1 1/4	14 1/2	1.15	1.73	2.30	
668M	1 & 1 1/4	.....	1 & 1 1/4	14	3/4	1.10	1.65	2.20	868Y	1 1/8 & 1 1/4	.....	1 1/8 & 1 1/4	14 1/2	1.15	1.73	2.30	
668R	1 1/8 & 1 1/4	.....	1 1/8 & 1 1/4	14	3/4	1.10	1.65	2.20									

See page 194 for special conditions and styles of finish

Drop-Forged Wrenches

Williams

Construction



15-Degree Angle

The tang is for bringing bolt-holes into line and for insertion into convenient openings when wrench is not in use, preventing loss and keeping tool in sight.

Number	For U. S. Standard Nut Size Bolt Inch	Opening Milled Inches	Extreme Length Inches	Thickness Heads Inch	Un-finished Each	Semi-finished Each	Finished Each
221	1/4	1/2	8	3/8	\$.16	\$.24	\$.32
222	5/16	19/32	8	3/8	.16	.24	.32
223	3/8	11/16	9 1/2	7/16	.20	.30	.40
224	7/16	25/32	9 1/2	7/16	.20	.30	.40
225	1/2	1 1/8	11	1 1/2	.35	.53	.70
226	9/16	31/32	11	1 1/2	.35	.53	.70
227	5/8	1 1/16	13	1 5/8	.50	.75	1.00
228	3/4	1 1/4	15	1 5/8	.65	.97	1.30
229	7/8	1 1/2	17	1 11/16	.85	1.28	1.70
230	1	1 5/8	19	3 1/4	1.10	1.65	2.20

Structural



Straight Opening

The tang is for bringing bolt-holes into line and for insertion into convenient openings when wrench is not in use, preventing loss and keeping tool in sight.

Number	For U. S. Standard Nut Size Bolt Inch	Opening Inches	Extreme Length Inches	Thickness Heads Inch	Handle Offset Inches	Un-finished Each	Semi-Finished Each
901	1/4	17/32	8	3/8	13/16	\$.16	\$.24
902	5/16	5/8	8	3/8	13/16	.16	.24
903	3/8	23/32	9 1/2	7/16	7/8	.20	.30
904	7/16	13/16	9 1/2	7/16	7/8	.20	.30
905	1/2	29/32	11	1 1/2	1	.35	.53
906	9/16	1	11	1 1/2	1 1/16	.35	.53
907	5/8	1 7/16	13	1 5/8	1 1/8	.50	.75
908	3/4	1 9/16	15	1 11/16	1 1/4	.65	.97
909	7/8	1 1/2	17	1 3/4	1 5/8	.85	1.28
910	1	1 11/16	19	1 13/16	1 3/8	1.10	1.65

Track



Straight Opening

Unfinished are broached or milled.

Semi-finished are broached or milled and case-hardened all over; heads not ground. Length of handle can be varied, if desired.

Number	For U. S. Standard Nuts Size Bolt Inches	Openings Inches	Extreme Length Inches	Unfinished Each	Semi-finished Each
194	3/4	1 5/16	24	\$.60	\$.90
195	...	1 1/8	24	.60	.90
196A	7/8	1 1/2	27	.75	1.13
196	...	1 9/16	27	.75	1.13
197	1	1 11/16	27	.75	1.13
198	...	1 1/2	30	1.20	1.80
199A	1 1/8	1 7/8	30	1.20	1.80
199	...	1 13/16	30	1.20	1.80

Straight Flat Handle



Unfinished Only

Unfinished are broached only. Case-hardened Wrenches to order

Number	Kind	Outside Diameter of Nuts Inches	Openings Inches	Extreme Length Inches	Thickness Heads Inch	Un-finished Each
173	Single Head	1 3/16	1 1/4	23	3/4	\$.80
174	Single Head	1 1/4	1 3/16	23	3/4	.80
175	Single Head	1 3/8	1 1/8	23	3/4	.80
176	Single Head	1 1/2	1 9/16	23	3/4	1.00
177	Single Head	1 5/8	1 11/16	23	3/4	1.00
182	Double Head	1 3/16 & 1 1/4	1 1/4 & 1 3/16	24	3/4	1.35
184	Double Head	1 1/4 & 1 3/8	1 3/16 & 1 7/16	24	3/4	1.35
186	Double Head	1 1/4 & 1 1/2	1 3/16 & 1 9/16	24	3/4	1.35
188	Double Head	1 3/8 & 1 1/2	1 7/16 & 1 9/16	24	3/4	1.35

Telegraph Lineman

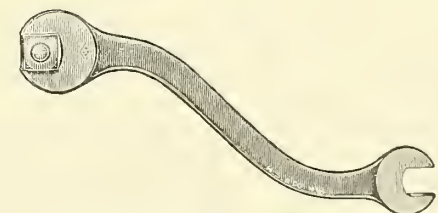


For Lag Screws, Rough Nuts, Etc.

Especially designed for dependable service in the erection of cross-arms on telegraph, etc., poles, but equally adaptable for use about agricultural and other machinery.

Number	Forged Openings for	Extreme Length Inches	Thickness Heads Inch	Un-finished Each
999	3/8, 7/16, 1/2, 9/16, 5/8 Lag Screws 5/16, 3/8, 7/16, 1/2, 9/16, 5/8 Square Nuts 7/16, 1/2, 9/8 Hexagon Nuts	13 3/4	1/2 & 5/8	\$2.00

Car



22 1/2-Degree Angle. Double Head

Long leverage. Unfinished are broached only

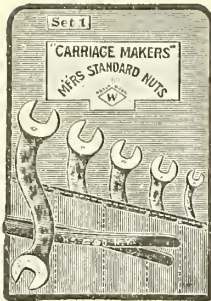
Semi-finished are broached, case-hardened all over; heads not ground

Number	For U. S. Standard Nuts Size Bolt Inches	Openings Inches	Extreme Length Inches	Thickness Heads Inch	Un-finished Each	Semi-finished Each
367	3/8 & 1/2	23/32 & 29/32	12	7/16 & 1/2	\$.50	\$.75
370	1/2 & 5/8	15/16 & 1 1/8	19	1/2 & 1/2	.85	1.28
371	1/2 & 3/4	15/16 & 1 5/16	19	1/2 & 1/2	.85	1.28
372	1/2 & 7/8	15/16 & 1 1/2	20	1/2 & 9/16	.92	1.38
373	5/8 & 3/4	1 1/8 & 1 5/16	20	1/2 & 1/2	.92	1.38
374	5/8 & 7/8	1 1/8 & 1 1/2	21	1/2 & 9/16	1.00	1.50
375	5/8 & 1	1 1/8 & 1 11/16	21	1/2 & 9/16	1.00	1.50
376	3/4 & 7/8	1 1/8 & 1 1/2	21	1/2 & 9/16	1.00	1.50
377	3/4 & 1	1 1/8 & 1 11/16	22	1/2 & 9/16	1.10	1.65
378	3/4 & 1 1/8	1 1/8 & 1 7/8	22	1/2 & 5/8	1.10	1.65
379	7/8 & 1	1 1/2 & 1 11/16	22	9/16 & 1 1/8	1.10	1.65
380	7/8 & 1 1/8	1 1/2 & 1 7/8	23	9/16 & 5/8	1.23	1.85
381	7/8 & 1 1/4	1 1/2 & 2 1/16	23	9/16 & 5/8	1.23	1.85
382	1 & 1 1/8	1 11/16 & 1 7/8	23	9/16 & 5/8	1.23	1.85
383	1 & 1 1/4	1 11/16 & 2 1/16	24	9/16 & 5/8	1.40	2.10
385	1 1/8 & 1 1/4	1 7/8 & 2 1/16	24	5/8 & 5/8	1.40	2.10
387	1 1/8 & 1 1/2	1 7/8 & 2 1/8	25	5/8 & 3/4	1.70	2.55
389	1 1/4 & 1 1/2	2 1/16 & 2 1/8	25	5/8 & 3/4	1.70	2.55

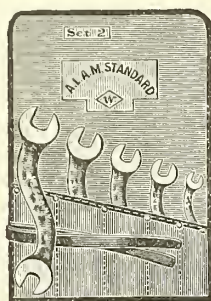
See page 194 for special conditions and styles of finish

Drop-Forged Wrench Sets

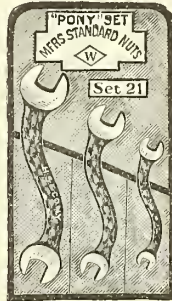
Williams



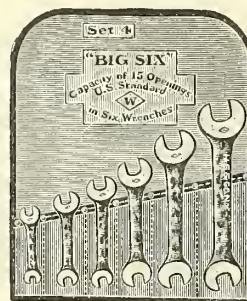
Carriage Makers



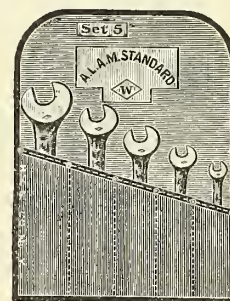
S.A.E. or A.L.A.M.
Light



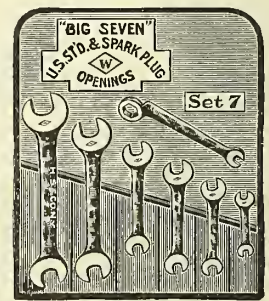
Pony Carriage Makers



Big Six



S.A.E. or A.L.A.M.



Big Seven

Unless otherwise specified Finished Wrenches will be supplied

Carriage Makers. Light

With openings for Manufacturers Standard Nuts

Number	For Manufacturers Standard Nuts Size Bolts Inch	Openings Milled Inch	Extreme Length Inches	Thick-ness Heads Inch	Un-finished Each	Semi-finished Each	Fin-ished Each
675	$\frac{3}{16}$ & $\frac{1}{4}$	$\frac{13}{32}$ & $\frac{1}{2}$	6 $\frac{1}{4}$	$\frac{7}{32}$	\$.13	\$.20	\$.26
677	$\frac{1}{4}$ & $\frac{5}{16}$	$\frac{1}{2}$ & $\frac{5}{8}$	7 $\frac{1}{8}$	$\frac{1}{4}$	.17	.25	.34
679	$\frac{5}{16}$ & $\frac{3}{8}$	$\frac{5}{8}$ & $\frac{11}{16}$	8 $\frac{1}{4}$	$\frac{5}{16}$	.22	.33	.44
681	$\frac{3}{8}$ & $\frac{7}{16}$	$\frac{11}{16}$ & $\frac{27}{32}$	9 $\frac{1}{4}$	$\frac{3}{8}$	.28	.42	.56
683	$\frac{7}{16}$ & $\frac{1}{2}$	$\frac{27}{32}$ & $\frac{15}{16}$	10 $\frac{3}{8}$	$\frac{7}{16}$	.34	.51	.68
No. 1 Set					1.14	1.71	2.28

Duck Roll, 45 cents extra

Original. Extra Capacity. Big Six

With openings milled for most popular United States Standard Nuts and Cap Screws

Number	For Nuts Diameter Bolts Inch	For Cap Screws Dia. Inch	Openings Milled U. S. Standard Inches	Extreme Length Inches	Thick-ness Heads Inch	Un-finished Each	Semi-finished Each	Fin-ished Each
725	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{5}{16}$ & $\frac{1}{2}$	4 $\frac{7}{8}$	$\frac{9}{32}$	\$.18	\$.27	\$.36
27C	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{16}$ & $\frac{11}{16}$	5 $\frac{7}{8}$	$\frac{5}{16}$	.22	.33	.44
28	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{19}{32}$ & $\frac{5}{8}$	6 $\frac{7}{8}$	$\frac{11}{32}$	.24	.36	.48
729	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{5}{8}$ & $\frac{3}{4}$	7 $\frac{3}{4}$	$\frac{11}{32}$	.26	.39	.52
34	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{7}{8}$ & $1\frac{1}{16}$	8 $\frac{3}{4}$	$\frac{1}{2}$	.40	.60	.80
736	$\frac{3}{4}$	$\frac{3}{4}$	1 & $1\frac{1}{4}$	11 $\frac{1}{2}$	$\frac{9}{16}$	.51	.77	1.02
No. 4 Set						1.81	2.72	3.62

Duck Roll, 45 cents extra

Automobile. Light

With openings for S. A. E. or A. L. A. M. Standard Nuts and Cap Screws

Number	For S. A. E. Standard Nuts and Cap Screws Size Bolt or Screw Inch	Openings Milled Inches	Extreme Length Inches	Thick-ness Heads Inch	Un-finished Each	Semi-finished Each	Fin-ished Each
675A	$\frac{1}{4}$ & $\frac{5}{16}$	$\frac{3}{8}$ & $\frac{1}{2}$	6 $\frac{1}{4}$	$\frac{7}{32}$	\$.13	\$.20	\$.26
679A	$\frac{3}{8}$ & $\frac{7}{16}$	$\frac{9}{16}$ & $\frac{11}{16}$	8 $\frac{1}{4}$	$\frac{5}{16}$	.22	.33	.44
681A	$\frac{1}{2}$ & $\frac{9}{16}$	$\frac{3}{4}$ & $\frac{7}{8}$	9 $\frac{1}{4}$	$\frac{3}{8}$	.28	.42	.56
683A	$\frac{5}{8}$ & $\frac{11}{16}$	$\frac{15}{16}$ & 1	10 $\frac{3}{8}$	$\frac{7}{16}$	.34	.51	.68
685B	$\frac{3}{4}$ & $\frac{7}{8}$	1 $\frac{1}{8}$ & $1\frac{1}{4}$	12	$\frac{1}{2}$	.44	.66	.88
No. 2 Set					1.41	2.12	2.82

Duck Roll, 45 cents extra

Automobile. Extra Capacity. Big Seven

With openings for United States Standard Nuts, Cap Screws and Spark Plug, Etc.

Number	For Nuts Diameter Bolts Inch	For Cap Screws Dia. Inch	Openings Milled U. S. Standard Inches	Extreme Length Inches	Thick-ness Heads Inch	Un-finished Each	Semi-finished Each	Fin-ished Each
725	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{5}{16}$ & $\frac{1}{2}$	4 $\frac{7}{8}$	$\frac{9}{32}$	\$.18	\$.27	\$.36
27C	$\frac{3}{8}$	$\frac{3}{8}$	$\frac{1}{16}$ & $\frac{11}{16}$	5 $\frac{7}{8}$	$\frac{5}{16}$	.22	.33	.44
28	$\frac{1}{16}$	$\frac{1}{16}$	$\frac{19}{32}$ & $\frac{5}{8}$	6 $\frac{7}{8}$	$\frac{11}{32}$	.24	.36	.48
729	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{5}{8}$ & $\frac{3}{4}$	7 $\frac{3}{4}$	$\frac{11}{32}$	.26	.39	.52
34	$\frac{5}{8}$	$\frac{5}{8}$	$\frac{7}{8}$ & $1\frac{1}{16}$	8 $\frac{3}{4}$	$\frac{1}{2}$	.40	.60	.80
736	$\frac{3}{4}$	$\frac{3}{4}$	1 & $1\frac{1}{4}$	11 $\frac{1}{2}$	$\frac{9}{16}$	.51	.77	1.02
S.P. }	S.A.E. }	U.S. }	S. P. }					
993 }	$\frac{3}{8}$	$\frac{1}{2}$	$\frac{3}{8}$ & $\frac{1}{2}$	8	$\frac{5}{16}$ & $\frac{1}{2}$	.40	.60	.80
No. 7 Set						2.21	3.32	4.42

Duck Roll, 45 cents extra

Pony Carriage Makers. Light

With openings for Manufacturers Standard Nuts

Number	For Manufacturers Standard Nuts Size Bolts Inch	Openings Milled Inch	Extreme Length Inches	Thick-ness Heads Inch	Un-finished Each	Semi-finished Each	Fin-ished Each
675	$\frac{3}{16}$ & $\frac{1}{4}$	$\frac{13}{32}$ & $\frac{1}{2}$	6 $\frac{1}{4}$	$\frac{7}{32}$	\$.13	\$.20	\$.26
679	$\frac{5}{16}$ & $\frac{3}{8}$	$\frac{5}{8}$ & $\frac{11}{16}$	8 $\frac{1}{4}$	$\frac{5}{16}$	.22	.33	.44
683	$\frac{7}{16}$ & $\frac{1}{2}$	$\frac{27}{32}$ & $\frac{15}{16}$	10 $\frac{3}{8}$	$\frac{7}{16}$	.34	.51	.68
No. 21 Set					.69	1.04	1.38

Duck Roll, 35 cents extra

Automobile

With openings milled for S. A. E. or A. L. A. M. Standard Nuts and Cap Screws

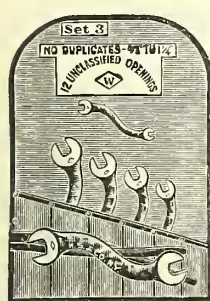
Number	For S. A. E. Standard Nuts and Cap Screws Diameter Bolts and Screws Inch	Openings Milled Inches	Extreme Length Inches	Thick-ness Heads Inch	Un-finished Each	Semi-finished Each	Fin-ished Each
723	$\frac{1}{4}$ & $\frac{5}{16}$	$\frac{3}{8}$ & $\frac{1}{2}$	4	$\frac{1}{4}$	\$.14	\$.21	\$.28
27C	$\frac{3}{8}$ & $\frac{7}{16}$	$\frac{9}{16}$ & $\frac{11}{16}$	5 $\frac{7}{8}$	$\frac{5}{16}$	.22	.33	.44
731A	$\frac{1}{2}$ & $\frac{9}{16}$	$\frac{3}{4}$ & $\frac{7}{8}$	7 $\frac{3}{4}$	$\frac{13}{32}$	.30	.45	.60
33C	$\frac{5}{8}$ & $\frac{11}{16}$	$\frac{3}{4}$ & 1	8 $\frac{3}{4}$	$\frac{7}{16}$	.36	.54	.72
737	$\frac{3}{4}$ & $\frac{7}{8}$	1 $\frac{1}{8}$ & $1\frac{1}{4}$	11 $\frac{1}{2}$	$\frac{9}{16}$	.58	.87	1.16
No. 5 Set					1.60	2.40	3.20

Duck Roll, 45 cents extra

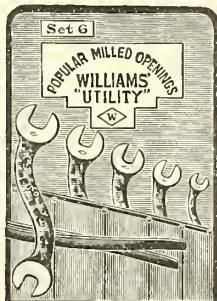
See page 194 for styles of finish

Drop-Forged Wrench Sets

Williams



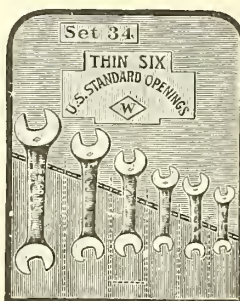
General Service



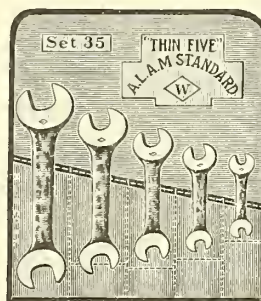
Utility Five



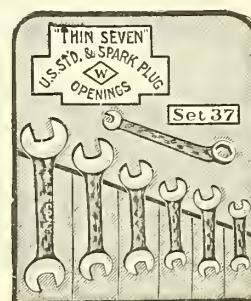
Pony Utility



Thin Six



Thin Five



Thin Seven

General Service. Light

With openings milled for twelve popular nut and screw sizes

Number	For Unclassified Nuts or Screws	Openings Milled Inches	Extreme Length Inches	Thickness Heads Inch	Unfinished Each	Semi-Finished Each	Finished Each
675B	Twelve	$\frac{3}{8}$ & $\frac{7}{16}$	6 $\frac{1}{4}$	$\frac{7}{32}$	\$.13	\$.20	\$.26
677B	Popular	$\frac{1}{2}$ & $\frac{11}{16}$	7 $\frac{1}{8}$	$\frac{1}{4}$	.17	.25	.34
679B	Milled	$\frac{5}{8}$ & $\frac{13}{16}$	8 $\frac{1}{4}$	$\frac{5}{16}$	.22	.33	.44
681B	Openings	$\frac{3}{4}$ & $\frac{13}{16}$	9 $\frac{1}{4}$	$\frac{3}{8}$	.28	.42	.56
683B	No	$\frac{7}{8}$ & 1	10 $\frac{3}{8}$	$\frac{7}{16}$	.34	.51	.68
685B	Duplicates	$\frac{11}{8}$ & $\frac{11}{4}$	12	$\frac{1}{2}$	.44	.66	.88
No. 3					1.58	2.37	3.16

Duck Roll, 45 cents extra

Utility. Light

With openings milled for nut measure instead of bolt size

Number	Openings Milled Inch	Extreme Length Inches	Thickness Heads Inch	Unfinished Each	Semi-Finished Each	Finished Each
675A	$\frac{3}{8}$ & $\frac{1}{2}$	6 $\frac{1}{4}$	$\frac{7}{32}$	\$.13	\$.20	\$.26
677	$\frac{1}{2}$ & $\frac{5}{8}$	7 $\frac{1}{8}$	$\frac{1}{4}$	.17	.25	.34
679C	$\frac{5}{8}$ & $\frac{3}{4}$	8 $\frac{1}{4}$	$\frac{5}{16}$	.22	.33	.44
681A	$\frac{3}{4}$ & $\frac{7}{8}$	9 $\frac{1}{4}$	$\frac{3}{8}$	.28	.42	.56
683B	$\frac{7}{8}$ & 1	10 $\frac{3}{8}$	$\frac{7}{16}$	.34	.51	.68
No. 6				1.14	1.71	2.28

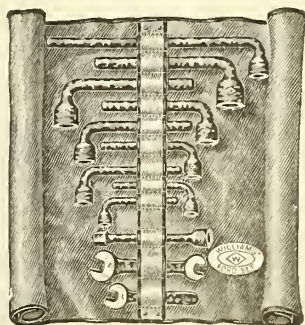
Duck Roll, 45 cents extra

Pony. Utility Light

With openings milled for popular sizes, without duplication

Number	Openings Milled Inch	Extreme Length Inches	Thickness Heads Inch	Unfinished Each	Semi-Finished Each	Finished Each
675A	$\frac{3}{8}$ & $\frac{1}{2}$	6 $\frac{1}{4}$	$\frac{7}{32}$	\$.13	\$.20	\$.26
679C	$\frac{5}{8}$ & $\frac{3}{4}$	8 $\frac{1}{4}$	$\frac{5}{16}$	.22	.33	.44
683B	$\frac{7}{8}$ & 1	10 $\frac{3}{8}$	$\frac{7}{16}$	.34	.51	.68
No. 26				.69	1.04	1.38

Duck Roll, 35 cents extra



Ford. Set A

Number	Class	Opening Size Inch	Extreme Length Inches	Unfinished Each	Semi-Finished Each	Finished Each
27	D. H. Engineers	$\frac{13}{32}$ & $\frac{11}{16}$	5 $\frac{7}{8}$	\$.22	\$.33	\$.44
702	S. H. Cap Screw	$\frac{9}{16}$	4 $\frac{3}{4}$	.12	.18	.24
963D	Offset Socket	$\frac{29}{64}$	4	.24	.36	.48
964A	Offset Socket	$\frac{33}{64}$	4 $\frac{1}{2}$	.26	.39	.52
965D*	Straight Socket	$\frac{37}{64}$	5 $\frac{3}{4}$	.29	.44	.58
965D	Offset Socket	$\frac{37}{64}$	5 $\frac{1}{4}$	.29	.44	.58
965A	Offset Socket	$\frac{39}{64}$	5 $\frac{1}{4}$	.29	.44	.58
966DS	Offset Socket	$\frac{41}{64}$	11	.42	.63	.84
967A*	Offset Socket	$\frac{45}{64}$	6	.36	.54	.72
967D	Offset Socket	$\frac{49}{64}$	6	.36	.54	.72
968A	Offset Socket	$\frac{51}{64}$	6 $\frac{7}{8}$	.40	.60	.80
969A	Offset Socket	$\frac{57}{64}$	7 $\frac{3}{4}$	.46	.69	.92
Ford Set				3.71	5.58	7.42

List price of Roll, 60 cents extra

*Use Wrench No. 967A as lever for Wrench No. 965D. Designed for extreme and convenient service upon the bolts and screws common to the "Ford" construction.

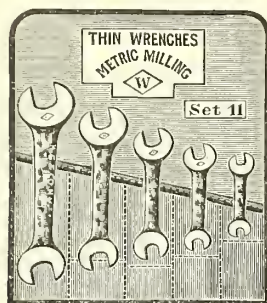
See page 194 for styles of finish

SINCE
1848

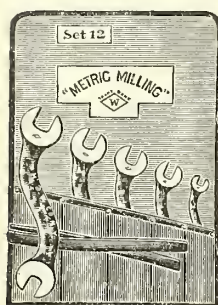
HAMMACHER SCHLEMMER & Co. NEW YORK

Metric

For Textile Machinery



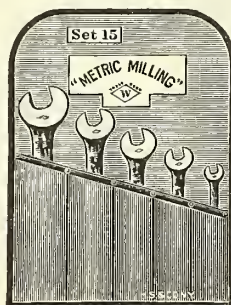
No. 11. Thin



No. 12

Drop-Forged Wrench Sets

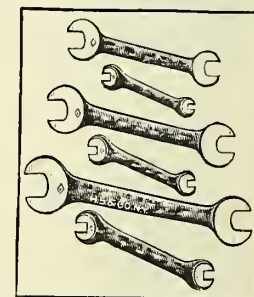
Williams



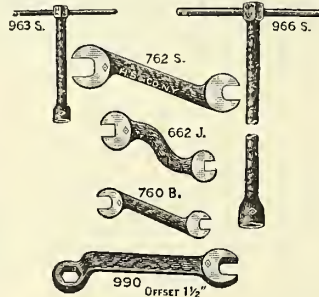
No. 15



Textile



Crompton & Knowles Loom



Draper Loom

Textile

With openings for every bolt size from $\frac{1}{16}$ inch to $\frac{3}{8}$ inch

No. 11. Thin
Selected from standard line of Check Nut Wrenches for lighter service on thin or regular thicknesses of nuts, etc.

Number	Openings Milled mm.	Extreme Length mm.	Thickness Heads mm.	Unfinished Each	Semi-finished Each	Finished Each
623M	10 & 12	111	3.5 & 3.9	\$.14	\$.21	\$.28
626M	14 & 16	140	3.9 & 4.7	.19	.29	.38
629M	18 & 20	174	4.7 & 5.5	.25	.38	.50
632M	22 & 25	216	5.5 & 7.1	.33	.50	.66
635M	28 & 30	264	7.1 & 7.9	.44	.66	.88
No. 11 Set				1.35	2.03	2.70

Duck Roll, 45 cents extra

No. 12
Selected from specially designed, lighter tools. Compact, convenient and serviceable.

Number	Openings Milled mm.	Extreme Length mm.	Thickness Heads mm.	Unfinished Each	Semi-finished Each	Finished Each
675M	10 & 12	159	5.5	\$.13	\$.20	\$.26
679M	14 & 16	210	7.9	.22	.33	.44
681M	18 & 20	235	9.5	.28	.42	.56
683M	22 & 25	264	11.1	.34	.51	.68
685M	28 & 30	304	12.7	.44	.66	.88
No. 12 Set				1.41	2.12	2.82

Duck Roll, 45 cents extra

No. 15
Dependable tools selected from recognized standards of wrench-weights and design.

Number	Openings Milled mm.	Extreme Length mm.	Thickness Heads mm.	Unfinished Each	Semi-finished Each	Finished Each
23M	10 & 12	102	6.3	\$.14	\$.21	\$.28
27M	14 & 16	149	7.9	.22	.33	.44
29M	18 & 20	175	8.7	.26	.39	.52
33M	22 & 25	222	11.1	.36	.54	.72
37M	28 & 30	292	14.2	.58	.87	1.16
No. 15 Set				1.56	2.34	3.12

Duck Roll, 45 cents extra

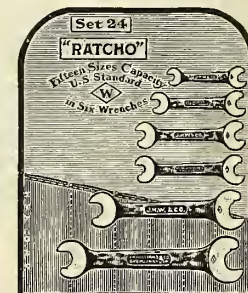
Junior "Ford." Set "B"

Drop-forged, accurately milled and case-hardened, the Wrenches in this selection—all tried out for service upon a Model "T" Ford Car—are of a class most commonly used for mechanical purposes and they will provide satisfactorily for the adjustment of about twenty prominent bolts and screws—Cylinder Head Bolts included—of that popular machine.

At moderate cost, owners are assured the maximum of first-class tool-service in their use.

Number	Class	Opening Size Inches	Extreme Length Inches	Unfinished Each	Semi-finished Each	Finished Each
27C	D. H. Engineers	$\frac{9}{16}$ & $\frac{11}{16}$	5 $\frac{7}{8}$	\$.22	\$.33	\$.44
729	D. H. Cap Screw	$\frac{5}{8}$ & $\frac{3}{4}$	6 $\frac{7}{8}$	.26	.39	.52
33C	D. H. Engineers	$\frac{15}{16}$ & 1	8 $\frac{3}{4}$	.36	.54	.72
734	D. H. Cap Screw	$\frac{7}{8}$ & 1 $\frac{1}{8}$	9 $\frac{3}{4}$	.40	.60	.80
966DS	S. H. Socket	$\frac{41}{64}$	11	.42	.63	.84
Ford Set "B" List Price of Roll \$.45 extra				1.66	2.49	3.32

See page 194 for styles of finish



Drop-Forged Spanner Wrenches

Williams

Pin



Unfinished are plain forgings.
Semi-Finished have pins milled, edges ground, and are case-hardened all over.
Finished have pins milled and are polished and case-hardened all over and lacquered.

Number	For Circle Diameter Inches	Extreme Length Inches	Finished Diameter Pin Inch	Unfinished Each	Semi-finished Each	Finished Each
452	1	4	$\frac{3}{16}$	\$.18	\$.27	\$.36
453	$1\frac{1}{4}$	$4\frac{1}{2}$	$\frac{13}{64}$	.19	.29	.38
454	$1\frac{1}{2}$	5	$\frac{7}{32}$	.20	.30	.40
455	$1\frac{3}{4}$	$5\frac{1}{2}$	$\frac{15}{64}$	.21	.31	.42
456	2	6	$\frac{1}{4}$	.22	.33	.44
457	$2\frac{1}{4}$	$6\frac{1}{2}$	$\frac{17}{64}$	.23	.35	.46
458	$2\frac{1}{2}$	7	$\frac{9}{32}$	.24	.36	.48
459	$2\frac{3}{4}$	$7\frac{1}{2}$	$\frac{19}{64}$	.26	.39	.52
460	3	8	$\frac{5}{16}$	.28	.42	.56
461	$3\frac{1}{4}$	$8\frac{1}{2}$	$\frac{21}{64}$	.30	.45	.60
462	$3\frac{1}{2}$	9	$\frac{11}{32}$	.32	.48	.64
463	$3\frac{3}{4}$	$9\frac{1}{2}$	$\frac{23}{64}$	.34	.51	.68
464	4	10	$\frac{3}{8}$	.36	.54	.72
466	5	12	$\frac{7}{16}$	.48	.72	.96
468	6	14	$\frac{1}{2}$	.65	.98	1.30

Face



Unfinished are plain forgings but have pins milled.
Semi-Finished have pins milled, the edges ground and are case-hardened all over.
Finished have pins milled, and are polished, case-hardened and lacquered all over.
The pins are forged integral with the wrench.

Number	Pins Distance C to C Inches	Pins Diameter Milled Inch	Pins Length Inch	Span of Jaws in Clear Inches	Length from C of Pins Inches	Thick-ness Inch	Unfinished Each	Semi-finished Each	Finished Each
418	1	$\frac{3}{16}$	$\frac{3}{16}$	$\frac{11}{16}$	$4\frac{1}{2}$	$\frac{3}{16}$	\$.15	\$.22	\$.30
420	$1\frac{1}{4}$	$\frac{7}{32}$	$\frac{7}{32}$	$\frac{29}{32}$	5	$\frac{3}{16}$	.17	.26	.34
422	$1\frac{1}{2}$	$\frac{7}{32}$	$\frac{7}{32}$	$1\frac{1}{8}$	$5\frac{1}{2}$	$\frac{3}{16}$	.19	.28	.38
424	$1\frac{3}{4}$	$\frac{7}{32}$	$\frac{7}{32}$	$1\frac{3}{8}$	6	$\frac{7}{32}$	.22	.33	.44
426	2	$\frac{1}{4}$	$\frac{1}{4}$	$1\frac{5}{8}$	$6\frac{1}{2}$	$\frac{7}{32}$	.25	.38	.50
428	$2\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$1\frac{7}{8}$	7	$\frac{7}{32}$	.29	.43	.58
430	$2\frac{1}{2}$	$\frac{9}{32}$	$\frac{9}{32}$	$2\frac{3}{32}$	$7\frac{1}{2}$	$\frac{1}{4}$	.33	.50	.66
432	$2\frac{3}{4}$	$\frac{9}{32}$	$\frac{9}{32}$	$2\frac{11}{32}$	8	$\frac{1}{4}$	.38	.57	.76
434	3	$\frac{5}{16}$	$\frac{5}{16}$	$2\frac{19}{32}$	$8\frac{1}{2}$	$\frac{1}{4}$	.43	.64	.86
436	$3\frac{1}{4}$	$\frac{5}{16}$	$\frac{5}{16}$	$2\frac{13}{16}$	$9\frac{1}{8}$	$\frac{1}{4}$	.49	.74	.98
438	$3\frac{1}{2}$	$\frac{5}{16}$	$\frac{5}{16}$	$3\frac{1}{32}$	$9\frac{3}{4}$	$\frac{1}{4}$	.55	.82	1.10
440	$3\frac{3}{4}$	$\frac{3}{8}$	$\frac{3}{8}$	$3\frac{1}{4}$	$10\frac{3}{8}$	$\frac{1}{4}$	.62	.93	1.24
442	4	$\frac{3}{8}$	$\frac{3}{8}$	$3\frac{7}{16}$	11	$\frac{1}{4}$	.70	1.05	1.40

Hook



Unfinished Only

The diameter of circle which the unfinished forgings fit is given in second column of table, but wrenches will finish to sizes stated in third column.

Number	Forgings For Circle Diameter Inches	Forgings will finish for Circles Diameter Inches	Extreme Length Inches	Thickness Inch	Each
403	$1\frac{1}{4}$	1 to $1\frac{1}{4}$	$4\frac{3}{4}$	$\frac{7}{32}$	\$.20
404	$1\frac{1}{2}$	$1\frac{3}{8}$ to $1\frac{5}{8}$	6	$\frac{1}{4}$	.23
405	2	$1\frac{3}{4}$ to 2	$7\frac{1}{8}$	$\frac{1}{4}$	.26
406	$2\frac{1}{4}$	$2\frac{1}{8}$ to $2\frac{3}{8}$	$8\frac{7}{16}$	$\frac{1}{4}$	.30
407	$2\frac{5}{8}$	$2\frac{1}{2}$ to $2\frac{3}{4}$	$9\frac{3}{4}$	$\frac{1}{4}$	.34
408	$3\frac{1}{8}$	$2\frac{7}{8}$ to $3\frac{1}{4}$	$10\frac{7}{8}$	$\frac{5}{16}$	.40
409	$3\frac{3}{4}$	$3\frac{3}{8}$ to $3\frac{7}{8}$	12	$\frac{5}{16}$	.48
410	$4\frac{3}{8}$	4 to $4\frac{1}{2}$	13	$\frac{5}{16}$	.58
412	$5\frac{3}{4}$	$5\frac{1}{4}$ to $5\frac{3}{4}$	15	$\frac{7}{16}$	.85

Light Hook



Unfinished Only

Length of handle can be varied if desired

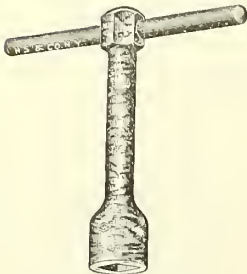
Number	Old Number	For Circle Diameter Inches	Extreme Length Inches	Hook Length Inch	Hook Width Inch	Hook Thick-ness Inch	Diameter Handle Inch	Each
491	308	$1\frac{3}{16}$	$6\frac{1}{2}$	$\frac{1}{16}$	$\frac{3}{8}$	$\frac{3}{16}$	$\frac{3}{8}$	\$.12
493	310	$1\frac{3}{4}$	$7\frac{1}{2}$	$\frac{1}{8}$	$\frac{3}{8}$	$\frac{3}{16}$	$\frac{3}{8}$	.14
494	311	$2\frac{1}{8}$	8	$\frac{1}{8}$	$\frac{3}{8}$	$\frac{3}{16}$	$\frac{3}{8}$	.15
495	312	$2\frac{1}{2}$	$8\frac{1}{4}$	$\frac{1}{8}$	$\frac{3}{8}$	$\frac{3}{16}$	$\frac{3}{8}$	.16
496	313	$2\frac{3}{4}$	$8\frac{1}{2}$	$\frac{1}{8}$	$\frac{3}{8}$	$\frac{3}{16}$	$\frac{3}{8}$	.18
497	314	3	$8\frac{3}{4}$	$\frac{1}{8}$	$\frac{3}{8}$	$\frac{3}{16}$	$\frac{3}{8}$	.20
498	315	$3\frac{1}{2}$	9	$\frac{1}{8}$	$\frac{3}{8}$	$\frac{3}{16}$	$\frac{3}{8}$	.22

See page 194 for styles of finish

Drop-Forged Wrenches

Williams

Single Head Socket, with or without Handle. For Square Nuts, Cap Screws and Set Screws



Square Opening

Unfinished are broached only.
Semi-Finished are broached,
edges ground and case-hardened
all over.

Finished are broached, polished
all over, case-hardened and lac-
quered.

Number	Square Openings				Ex- treme Length Inches	Diam- eter Head Inches	Diam- eter Shank Inches	Hex. End same size as U. S. Nut for Pin- Size Bolt Inches	Pin-Handle Diam. Length Inch Inches	Unfinished		Semi-finished		Finished		
	For Set Screw Size Inches	For Cap Screw Diam- eter Screw Inches	For U. S. Stand- ard Nut Size Bolt Inches	Short Diam- eter Broach- ed Open- ing Inches						With- out Pin- Han- dle or Hole for same Each	With Pin- Han- dle and Hole for same Each	With- out Pin- Han- dle or Hole for same Each	With Pin- Han- dle and Hole for same Each	With- out Pin- Han- dle or Hole for same Each	With Pin- Han- dle and Hole for same Each	
960H	1/8	...	...	1/8	3 3/8	1 1/2	7/32	1/8	1/8	3	\$.18	\$.26	\$.27	\$.35	\$.36	\$.44
961H	3/16	...	...	13/64	4	1 1/2	1/4	3/16	3/16	4	.20	.30	.30	.40	.40	.50
961J	1/4	...	...	1/4	4	1 1/2	1/4	1/2	1/2	4	.20	.30	.30	.40	.40	.50
962H	5/16	...	...	21/64	4 1/2	1 5/8	3/8	1/2	1/2	4 1/2	.22	.33	.33	.44	.44	.55
963H	3/8	1/4	...	25/64	4 7/8	1 7/8	3/8	5/8	5/8	5 1/8	.24	.37	.36	.49	.48	.61
965H	7/16	5/8	...	29/64	5 3/4	2	7/8	3/4	3/4	5 3/4	.29	.43	.44	.58	.58	.72
966H	1/2	3/8	1/4	33/64	6 1/8	2 1/8	1	1 1/2	1 1/2	6 1/8	.32	.47	.48	.63	.64	.79
967H	9/16	7/8	...	37/64	6 1/2	2 1/2	1 1/8	1 1/2	1 1/2	6 3/4	.36	.53	.54	.71	.72	.89
967X	...	...	...	39/64	6 1/2	2 1/2	1 1/8	1 1/2	1 1/2	6 3/4	.36	.53	.54	.71	.72	.89
968H	5/8	1 1/2	...	41/64	7	2 1/2	1 1/4	1 1/2	1 1/2	6 3/4	.40	.57	.60	.77	.80	.97
968M	...	...	...	43/64	7	2 1/2	1 1/4	1 1/2	1 1/2	6 3/4	.40	.57	.60	.77	.80	.97
969H	3/4	5/8	...	45/64	7 3/8	3	1 3/8	1 1/2	1 1/2	7 3/8	.46	.64	.69	.87	.92	1.10
970X	...	...	...	47/64	7 7/8	3 1/8	1 1/2	1 1/2	1 1/2	8 1/8	.52	.72	.78	.98	1.04	1.24
971H	7/8	3/4	1/2	49/64	8 1/4	3 1/4	1 5/8	1 1/2	1 1/2	8 1/8	.60	.80	.90	1.10	1.20	1.40
971X	...	...	...	51/64	8 1/4	3 1/4	1 5/8	1 1/2	1 1/2	8 1/8	.60	.80	.90	1.10	1.20	1.40
973H	1	...	...	53/64	9 1/8	3 1/2	1 7/8	1 1/2	1 1/2	9 1/8	.80	1.10	1.20	1.50	1.60	1.90
974X	...	...	...	55/64	9 1/2	3 1/2	2	1 1/2	1 1/2	9 1/2	.90	1.25	1.35	1.70	1.80	2.15
974H	1 1/8	7/8	...	57/64	9 1/2	3 1/2	2	1 1/2	1 1/2	9 1/2	.90	1.25	1.35	1.70	1.80	2.15
976H	1 1/4	1	3/4	59/64	10 3/8	3 1/2	2 1/4	1 1/2	1 1/2	10 3/8	1.15	1.55	1.72	2.12	2.30	2.70
977M	...	1 1/8	...	61/64	10 7/8	3 3/4	2 1/2	1 1/2	1 1/2	10 7/8	1.30	1.75	1.95	2.40	2.60	3.05
977X	...	...	...	63/64	10 7/8	3 3/4	2 1/2	1 1/2	1 1/2	10 7/8	1.30	1.75	1.95	2.40	2.60	3.05
977O	...	1 1/4	...	65/64	10 7/8	3 3/4	2 1/2	1 1/2	1 1/2	10 7/8	1.30	1.75	1.95	2.40	2.60	3.05
978M	...	1 3/8	1	67/64	11 3/8	3 3/4	2 3/4	1 3/8	1 3/8	10 7/8	1.60	2.05	2.40	2.85	3.20	3.65
979X	...	...	1 1/8	69/64	11 7/8	3	1 1/4	1 1/4	1 1/4	11 7/8	2.10	2.60	3.15	3.65	4.20	4.70
980X	...	...	1 1/4	71/64	12 1/2	3 5/16	1 3/8	1 3/8	1 3/8	12 1/2	2.80	3.45	4.20	4.85	5.60	6.25

Hexagon Opening



Offset form may be had of any
wrench listed on this page, if so
ordered, at prices same as for
straight wrenches without pin,
handle or hole.

Number	Hexagon Openings				Ex- treme Length Inches	Diam- eter Head Inches	Diam- eter Shank Inches	Hex. End same size as U. S. Nut; for Pin- Handle Diam. Length Inches	Pin-Handle Diam. Length Inches	Unfinished		Semi-Finished		Finished	
	For U. S. Stand- ard Nut Size Bolt Inches	For Cap Screw Diam- eter Inches	Short Diam- eter Broach- ed Open- ing Inches	With- out Pin- Han- dle or Hole for same Each						With Pin- Han- dle and Hole for same Each	With- out Pin- Han- dle or Hole for same Each	With Pin- Han- dle and Hole for same Each	With- out Pin- Han- dle or Hole for same Each	With Pin- Han- dle and Hole for same Each	
961A	1/8	...	21/64	4	1 1/2	1/4	3/16	3/16	4	\$.20	\$.30	\$.30	\$.40	\$.40	\$.50
962D	...	3/16	25/64	4 1/2	5/8	3/8	1/4	1/4	4 1/2	.22	.33	.33	.44	.44	.55
963A	...	1/4	29/64	4 7/8	1 1/8	3/8	5/16	5/16	5 1/8	.24	.37	.36	.49	.48	.61
963D	...	5/16	33/64	5 1/4	3/4	3/8	5/16	5/16	5 1/8	.24	.37	.36	.49	.48	.61
964A	1/4	...	37/64	5 3/4	7/8	7/8	5/16	5/16	5 1/8	.26	.39	.39	.52	.52	.65
965D	...	3/8	41/64	5 3/4	7/8	7/8	5/16	5/16	5 3/4	.29	.43	.44	.58	.58	.72
965A	...	1/2	45/64	6 1/8	1	1 1/2	5/16	5/16	5 3/4	.29	.43	.44	.58	.58	.72
966D	...	5/8	49/64	6 1/2	1 1/8	1 1/8	1/2	1/2	6 1/8	.32	.47	.48	.63	.64	.79
967A	...	3/8	53/64	6 1/2	1 1/8	1 1/8	1/2	1/2	6 3/4	.36	.53	.54	.71	.72	.89
967D	...	1/2	57/64	6 1/2	1 1/8	1 1/8	1/2	1/2	6 3/4	.36	.53	.54	.71	.72	.89
968A	...	1/2	61/64	7	1 1/4	1 1/4	1/2	1/2	6 3/4	.40	.57	.60	.77	.80	.97
968D	...	5/8	65/64	7	1 1/4	1 1/4	1/2	1/2	6 3/4	.40	.57	.60	.77	.80	.97
969A	...	3/4	69/64	7 3/8	1 3/8	1 3/8	5/8	5/8	7 3/8	.46	.64	.69	.87	.92	1.10
970A	...	1/2	73/64	7 7/8	1 1/2	1 1/2	5/8	5/8	8 1/8	.52	.72	.78	.98	1.04	1.24
970D	...	3/4	77/64	7 7/8	1 1/2	1 1/2	5/8	5/8	8 1/8	.52	.72	.78	.98	1.04	1.24
971A	...	5/8	81/64	8 1/4	1 5/8	1 5/8	3/4	3/4	8 1/8	.60	.80	.90	1.10	1.20	1.40
971D	...	7/8	85/64	8 1/4	1 5/8	1 5/8	3/4	3/4	8 1/8	.60	.80	.90	1.10	1.20	1.40
973A	...	3/4	1	9 1/8	1 7/8	1 7/8	3/4	3/4	9 1/8	.80	1.10	1.20	1.50	1.60	1.90
974D	...	1 1/8	1 1/32	9 1/2	2	2 1/16	7/8	7/8	9 1/2	.90	1.25	1.35	1.70	1.80	2.15
975A	...	7/8	1 1/2	10	2 1/8	2 1/8	1	1	9 1/2	1.00	1.35	1.50	1.85	2.00	2.35
975D	...	1 1/4	1 1/2	10	2 1/8	2 1/8	1	1	9 1/2	1.00	1.35	1.50	1.85	2.00	2.35
976A	...	1	1 1/4	10 3/8	2 1/4	2 1/4	1 1/16	1 1/16	10 3/8	1.15	1.55	1.72	2.12	2.30	2.70
977A	...	1 1/8	1 1/2	10 7/8	2 1/2	2 1/2	1 1/8	1 1/8	10 7/8	1.30	1.75	1.95	2.40	2.60	3.05
978A	...	1 1/4	1 3/2	11 3/8	2 3/4	2 3/4	1 3/16	1 3/16	10 7/8	1.60	2.05	2.40	2.85	3.20	3.65
979A	...	1 3/8	2 1/2	11 7/8	3	3	1 1/4	1 1/4	11 7/8	2.10	2.60	3.15	3.65	4.20	4.70
980A	...	1 1/2	2 1/2	12 1/2	3 5/16	3 5/16	1 3/8	1 3/8	12 1/2	2.80	3.45	4.20	4.85	5.60	6.25

Unless otherwise specified, wrenches with pin-handles will be sent

See page 194 for styles of finish